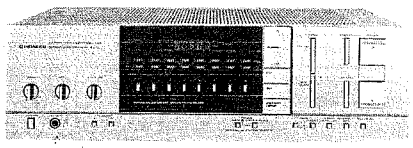
PIONEER®

Service Manual

REPAIR & ADJUSTMENTS



COMPUTER CONTROLLED STEREO RECEIVER

SX-6

MODEL SX-6 COMES IN FOUR VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
KU	120V only	U.S.A. model
S	110V, 120V, 220V and 240V (Switchable)	General export model
S/G	110V, 120V, 220V and 240V (Switchable)	U.S. Military model
KC	120V only	Canada model

- This service manual is applicable to the KU type. When repairing the S and S/G types, please see the additional service manual (ARP-013), and see the ARP-014 for KC type.
- For the circuit description, please refer to the model SX-7 service manual (ARP-074).
- Ce manuel d'instruction se refère au mode de réglage, en français.
- Este manual de servicio trata del método de ajuste escrito en español.

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1. SPECIFICATIONS

Amplifier Section

Continuous Average Power Output is 45 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.009% total harmonic distortion.**

Total Harmonic Distortion** (20Hz to 20,000Hz, 8 ohms, from AUX/VIDEO)
- continuous rated power output ..... No more than 0.009%
- 22.5 watts per channel power output ..... No more than 0.009%

Intermodulation Distortion** (50Hz:7,000Hz = 4:1, 8 ohms, from AUX/VIDEO)
- continuous rated power output ..... No more than 0.009%

Damping Factor (20Hz to 20,000Hz, 8 ohms) 50

Input (Sensitivity/Impedance)
- PHONO 2.5mV/50kilohms
- TUNER, AUX/VIDEO, TAPE PLAY 1, 2 ..... 150mV/50kilohms

Phono Overload Level (T.H.D. 0.009%, 1,000Hz, from REC OUT)
- PHONO 150mV

Output (Lever/Impedance)
- TAPE REC 1, 2 ..... 150mV/2.2 kilohms

Frequency Response
- PHONO (RIAA Equalization) 20Hz to 20,000Hz±0.3dB
- TUNER, AUX/VIDEO, TAPE PLAY 1, 2 ..... 5Hz to 100,000Hz $^{+0}_{-3}$dB

Tone Control
- BASS ..... ±8dB (100Hz)
- TREBLE ..... ±8dB (10kHz)

Filter
- SUBSONIC 15Hz (6dB/oct.)

Loudness Contour (Volume control set at –40dB position) ..... +6dB (100Hz), +3dB (10kHz)

Hum and Noise (IHF, short circuited A network)
- PHONO 79dB

Muting ..... –25dB

FM Tuner Section

Usable Sensitivity (MONO) ..... 10.3dBf (IHF) (0.9μV 75 ohms)

50dB Quieting Sensitivity
- MONO ..... 15.7dBf (1.6μV 75 ohms)
- STEREO ..... 37dBf (19.5μV 75 ohms)

Signal-to-Noise Ratio
- MONO ..... 80dB (at 85dBf)
- STEREO ..... 75dB (at 85dBf)

Distortion (at 65dBf)
- MONO 100Hz 0.1%
- 1kHz 0.07%
- 6kHz 0.15%
- STEREO 100Hz 0.2%
- 1kHz 0.1%
- 6kHz 0.25%

Capture Ratio 1dB

Alternate Channel Selectivity (400kHz) 80dB

Stereo Separation 1kHz 45dB
30Hz to 15kHz 35dB

Frequency Response ..... 20Hz to 15kHz±0.5dB

Spurious Response Ratio 90dB

Image Response Ratio 80dB

IF Response Ratio 90dB

AM Suppression Ratio 55dB

Subcarrier Product Ratio 40dB

SCA Rejection Ratio 60dB

Muting Threshold 29.3dBf (8μV)

Antenna Input . . 300 ohms balanced, 75 ohms unbalanced

AM Tuner Section

Sensitivity
- IHF, ferrite antenna 300μV/m
- IHF, external antenna 15μV

Selectivity 27dB

Signal-to-Noise Ratio 50dB

Image Response Ratio 40dB

IF Response Ratio 80dB

Antenna ..... Built-in ferrite loopstick antenna

Miscellaneous

Power Requirements ..... AC 120V, 60Hz

Power Consumption ..... 230W (UL), 280VA (CSA)

Dimensions ..... 420 (W) x 130 (H) x 370 (D) mm
16-9/16 (W) x 5-1/8 (H) x 14-9/16 (D) in

Weight (without package) ..... 8.5kg (18 lb 12 oz)

Furnished Parts

FM T-type Antenna 1

Dry Batteries ("AA" type) 2

Station Card 2

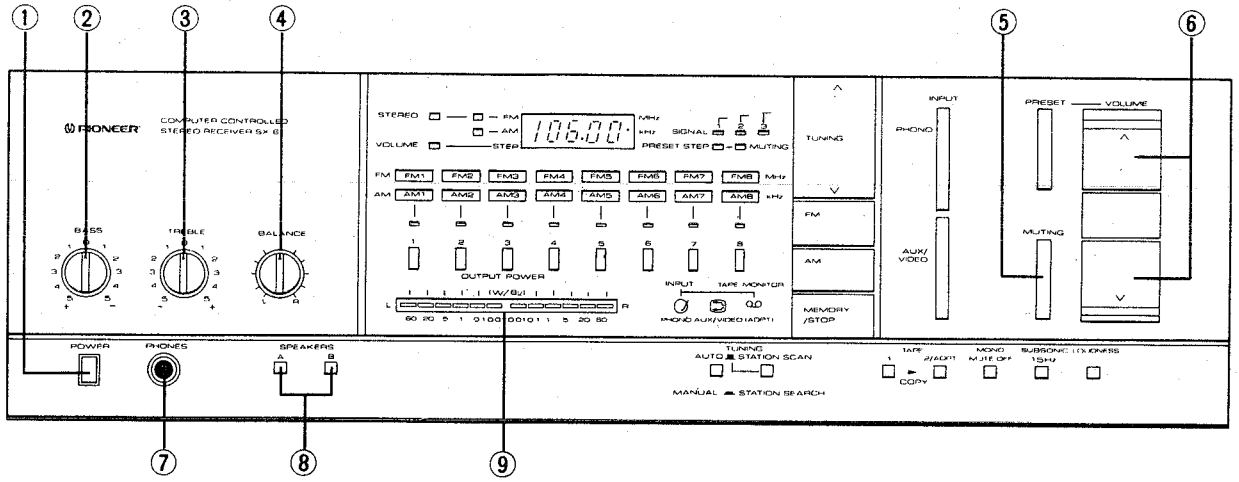
Operating Instructions 1

**Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for amplifier.*

***Measured by Audio Analyzer.*

NOTE:
Specifications and design subject to possible modification without notice.

2. FRONT PANEL FACILITIES



① POWER SWITCH

Power is supplied to the unit when this switch is depressed ("in" position). Once the power has been switched on, the volume level heard before the POWER switch was set to OFF blinks on the display for about 5 seconds.

NOTES:

- *When a function is selected or the VOLUME switch is depressed while the volume level is blinking, either the level lights or the frequency is displayed.*
- *Although it is very rare, nothing may appear on the display if a switch is set from OFF to ON immediately after the POWER switch is set to ON. In this case, set the POWER switch to OFF and then depress the switch in question again slowly.*

② BASS CONTROL

Use this control to adjust the bass of the sound. When the control is moved to the right (+ direction), the bass is emphasized, and when it is moved to the left (− direction), the bass is attenuated.

③ TREBLE CONTROL

Use this control to adjust the treble of the sound. When the control is moved to the right (+ direction), the treble is emphasized, and when it is moved to the left (− direction), the treble is attenuated.

④ BALANCE CONTROL

Use the control to balance the volume of the left and right channels. If the sound appears to be louder on the right, it means that the volume of the right channel is higher. Turn the balance control to the left and adjust. Conversely, if the sound appears to be louder on the left, it means that the volume of the left channel is higher. Therefore, turn the balance control to the right and adjust.

⑤ MUTING SWITCH

Press this switch to attenuate the audio output indicated on the display by 25dB. There is no need to adjust the VOLUME level if you use this switch when turning down the audio output temporarily and when changing over records or tapes.

NOTE:

By adjusting the VOLUME switch in combination with the MUTING switch, it is possible to adjust the volume more finely across a very wide range.

⑥ VOLUME SWITCHES

Use these switches to adjust the output level to the speakers and headphones. Press the ∧ switch to increase the output level. Press the ∨ swich to attenuate the output level.

⑦ PHONES JACK

Plug the headphones plug into this jack when you want to listen through your stereo headphones.
Release both SPEAKERS switches if you want to listen to the sound through your headphones only.

⑧ SPEAKERS SWITCHES

Depress the switch corresponding to the speakers connected to the SPEAKERS terminals (A or B) on the rear panel. "A" refers to the speakers which have been connected to the A SPEAKERS terminals on the rear panel while "B" refers to the speakers which have been connected to the B SPEAKERS terminals.

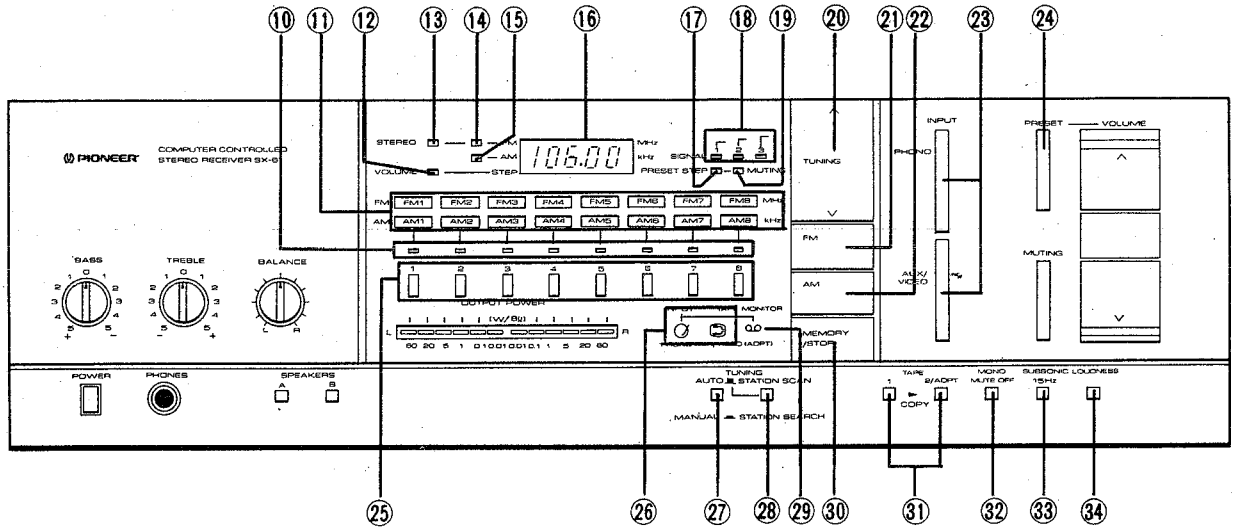
NOTE:

No sound will be heard through the speakers when both the A and B switches are depressed if only one set of speakers has been connected to either the A or B SPEAKERS terminals.

⑨ OUTPUT POWER METER

This meter allows you to read out the rated power level on the bar display when speakers with a nominal impedance of 8 ohms are connected to the SPEAKERS terminals.

(Continued to next page)



⑩ STATION INDICATORS

The indicator that corresponds to the STATION CALL switch which has been depressed lights.

NOTE:
When presetting a station, all eight indicators light in sequence for about 5 seconds.

⑪ STATION DISPLAY WINDOWS

Insert the frequency cards of the broadcasting stations which have been preset into the STATION CALL switches.

⑫ VOLUME STEP INDICATOR

This lights when the volume steps are indicated on the display.

⑬ FM STEREO INDICATOR

This lights when receiving an FM stereo program.

⑭ FM INDICATOR

This lights when receiving the FM broadcasts.

⑮ AM INDICATOR

This lights when receiving the AM broadcasts.

⑯ DISPLAY

This indicates the broadcasting frequency when a station has been tuned in; otherwise, it indicates the volume steps with the reproduction of the program source.

NOTE:
When the power is switched on, the volume step display blinks to indicate the volume level. After blinking, the volume step lights or the frequency is displayed.

⑰ PRESET STEP INDICATOR

This lights when the sound reaches the preset volume level.

NOTE:
When presetting the volume level, the display blinks for about 5 seconds to indicate that the volume level may now be preset.

⑱ SIGNAL INDICATOR

This indicator lights in sequence from 1 to 3 during the tuning of an AM or FM broadcast in accordance with the strength of the signals being received. The optimum tuning point is where the maximum number of indicators lights.

⑲ MUTING INDICATOR

This lights when the MUTING switch is pressed.

⑳ TUNING SWITCH

This switch is used to tune in the station.
Depress the ∧ part to tune in a station with a higher frequency than that on the display; depress the ∨ part to tune in a station with a lower frequency.

NOTE:
For further details on the tuning, refer to the ㉗ AUTO/ MANUAL SELECTOR.

㉑ FM SWITCH

Depress this switch for FM reception.

㉒ AM SWITCH

Depress this switch for AM reception.

㉓ INPUT SELECTOR

PHONO: Press this switch when playing a record on the turntable connected to the PHONO jacks.

AUX/VIDEO: Press this switch when listening to an audio component connected to the AUX/ VIDEO jacks.

㉔ PRESET-VOLUME SWITCH

This is depressed when the volume level is to be set to the preset level (the PRESET STEP indicator lights). When presetting the volume level, depress the MEMORY/STOP switch with the volume level still indicated on the display, and then depress the PRESET-VOLUME switch.

㉕ STATION CALL SWITCHES

These are pressed to call out preset broadcasting stations and to preset the station.

To call out a station, first set the desired frequency band using the FM or AM switches and then press the desired switch.

㉖ INPUT INDICATORS

These light when the INPUT (PHONO or AUX/VIDEO) switch is pressed.

㉗ AUTO/MANUAL SELECTOR

This is used to select the reception mode.

AUTO (released position): Auto tuning is selected in accordance with the position selected by the STATION SCAN/STATION SEARCH selector on the right.

MANUAL (depressed position): For manual tuning

Depress the TUNING switch and tune in the station manually. Each time the TUNING switch is depressed, the frequency changes in 100kHz steps during FM reception and in 9kHz or 10kHz steps during AM reception in accordance with the position of the AM CHANNEL STEP switch. When the TUNING switch is kept depressed, the frequency is continuously scanned. Tuning stops when the upper or lower limit of the frequency band is reached.

㉘ STATION SCAN/STATION SEARCH SELECTOR

This is used to select the auto tuning mode when the AUTO/MANUAL selector switch on the left is at AUTO.

STATION SCAN: When the TUNING switch is depressed, the broadcasting stations start to be scanned and this procedure stops once a station has been picked up. The program of that station is heard for about 5 seconds. The tuning operation then resumes and sound is heard in the same way. Each of the stations is thus picked up in turn.

When the MEMORY/STOP switch is depressed once you hear the sound of the desired program, the tuning operation stops and the unit is set to the reception mode.

STATION SEARCH: When the TUNING switch is depressed, the broadcasting stations start to be scanned, but this operation stops once a station has been picked up and the unit is set to the reception mode. Depress the TUNING switch if the station picked up is not the one desired. The tuning operation now starts over again.

㉙ TAPE MONITOR INDICATOR

This lights when the TAPE (1 or 2/ADPT) switches are depressed.

㉚ MEMORY/STOP SWITCH

This switch is used to preset the broadcasting stations into the STATION CALL switches or to preset the desired volume level into the PRESET-VOLUME switch.

This switch is also used to stop the tuning operation during the STATION SEARCH or STATION SCAN functions.

㉛ TAPE SWITCHES

1: Depress this switch to monitor the recording or playback of a tape on the tape deck connected to the TAPE 1 jacks (REC and PLAY).

2/ADPT: This is depressed when using a tape deck or adaptor unit connected to the rear panel TAPE 2/ADAPTOR jacks.

NOTE:

Depress switch 1 and release switch 2/ADPT when dubbing a tape in the deck connected to the TAPE 1 jacks onto a tape in the deck connected to the TAPE 2/ADAPTOR jacks.

㉜ MONO MUTE OFF SWITCH

The sound is heard in mono when this switch is set to the depressed position. Normally, the switch is kept at the released position. During FM or AM reception, the noise is reduced and reception is made clear. When the station is distant and its signals are weak, depress the switch and tune in the station manually.

㉝ SUBSONIC SWITCH

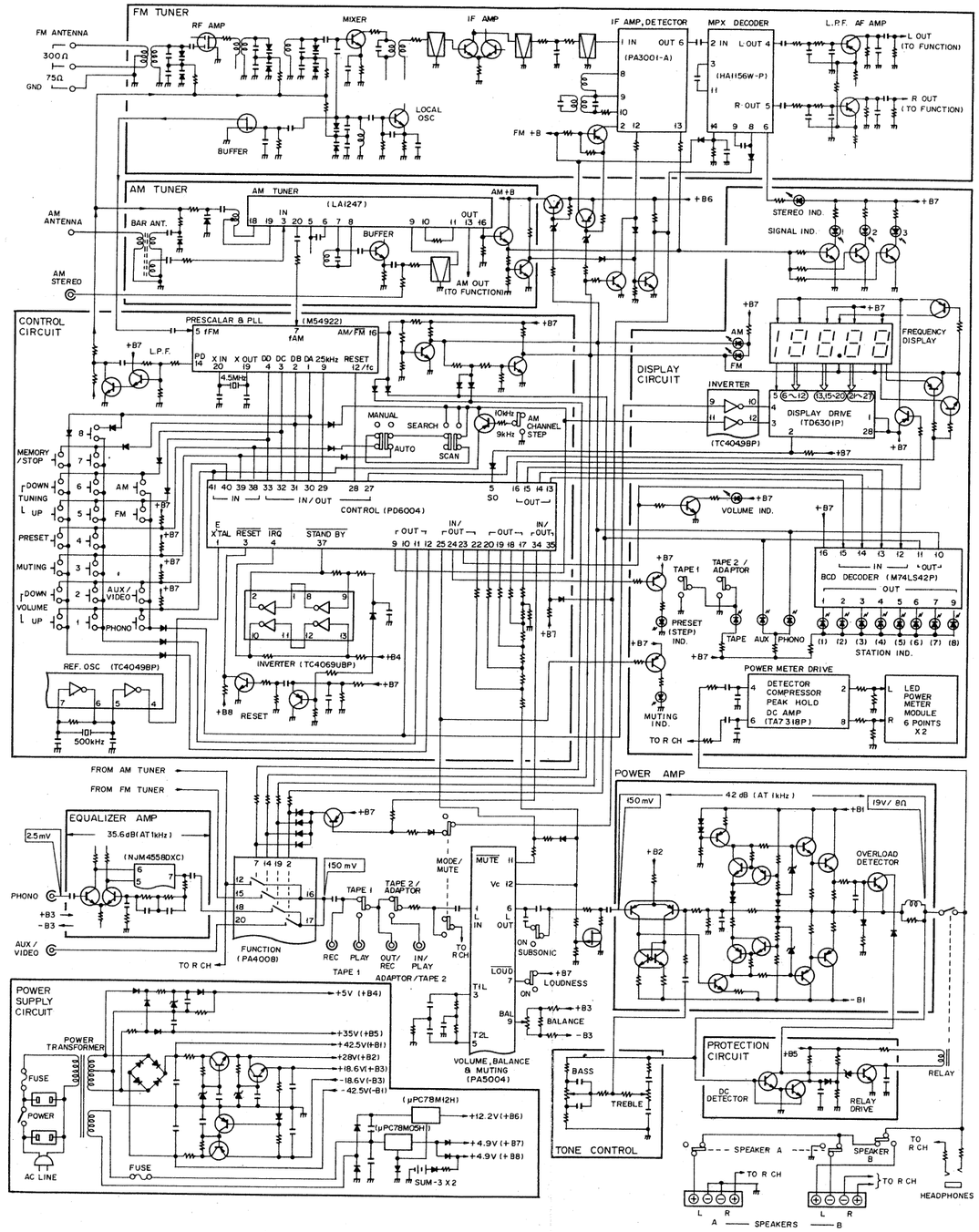
The subsonic filter with the 15Hz cut-off frequency is actuated when this switch is depressed. This filter serves to attenuate the frequencies lower than 15Hz with a 6dB/oct. slope and, therefore, it can be used to suppress the ultra-low-range noise which is generated by record warp and other factors. This noise cannot actually be heard by the ear but it can cause cross modulation distortion and even speaker damage. Use this switch when required during record play.

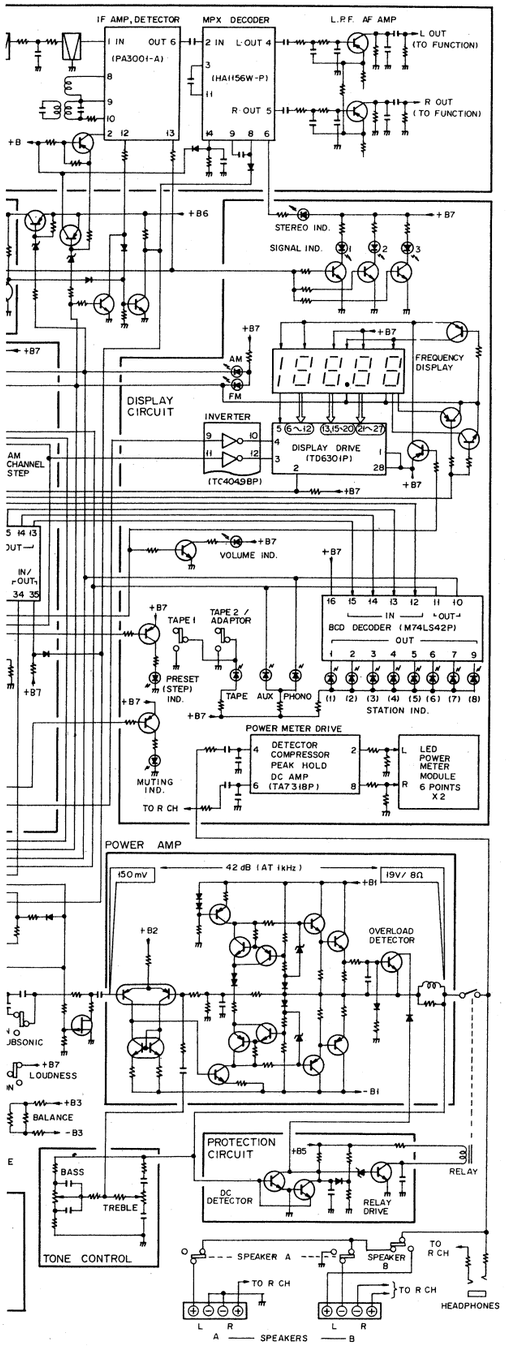
㉞ LOUDNESS SWITCH

When listening to a performance with the VOLUME level is low, depress this switch and the bass and treble will be accentuated.

When the volume is low, the human ear finds it harder to hear the bass and treble than when the volume is high. The LOUDNESS switch is thus designed to compensate for this deficiency.

3. BLOCK DIAGRAM



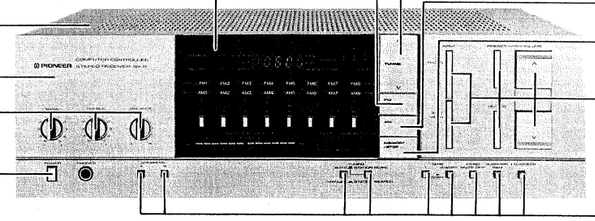


4. PARTS LOCATION

NOTES:

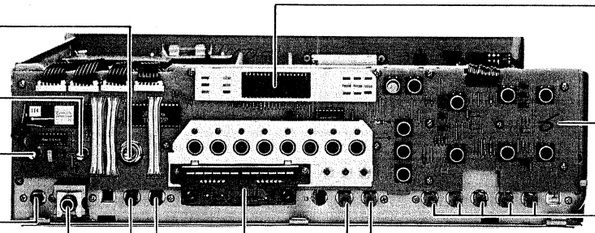
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Front Panel View



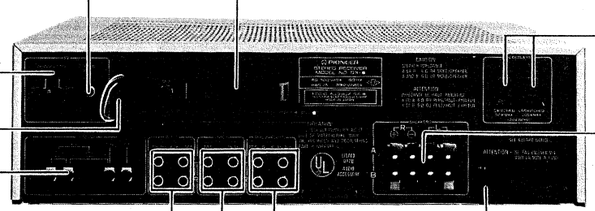
- Knob (FM) AAD-402
- Display cover ANR-408
- Top cover ANE-360
- Front panel assembly ANM-064
- Knob (BALANCE, TREBLE,BASS) AAB-274
- Knob (POWER) AAD-406
- Knob (TUNING) AAD-401
- Knob (AM) AAD-403
- Knob (MEMORY/STOP) AAD-404
- Knob array (VOLUME,PRESET, MUTING,INPUT) AAD-407
- Knob AAD-405

Front View with Panel Removed



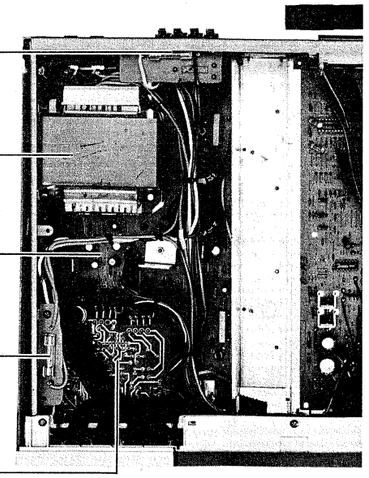
- ★Variable resistor (BALANCE) ACT-028
- ★Variable resistor (TREBLE) ACT-139
- ★Variable resistor (BASS) ACT-138
- ⚠★★Push switch (POWER) ASG-521
- Phone jack (PHONES) AKN-030
- ★★Push switch (SPEAKERS) ASG-299
- Level meter assembly AAV-305
- ★LED numberic display AEL-378
- Control assembly AWX-220
- ★★Push switch ASG-297
- ★★Push switch (TUNING) ASG-298

Rear Panel View



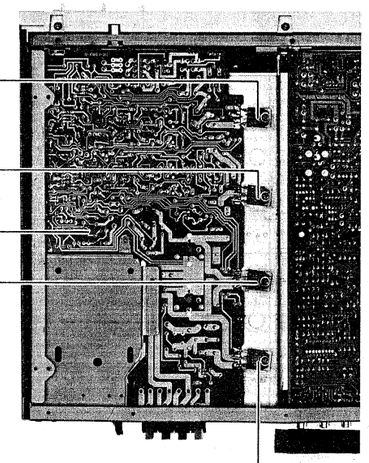
- Terminal (AM STEREO OUT) AKB-076
- ★★Slide switch (AM CHANNEL STEP) ASH-015
- Bar antenna assembly ATB-631
- Terminal (ANTENNA) AKA-017
- Terminal (INPUT, TAPE1, TAPE2/ADAPTOR) AKB-078
- Case cover ANR-432
- ⚠AC socket (AC OUTLETS) AKP 039
- Terminal (SPEAKERS) AKE-103
- ⚠AC power cord ADG-052

Top View



- ⚠★★Fuse (5A) AEK-108
- ⚠★Power transformer ATT-841
- AF assembly GWK-185
- ⚠★★Fuse (2A) AEK-103
- Tone control assembly GWG-160

Botton View



- ⚠★★Power transistor 2SA1104/A/-Y (2SA1104/A/-O)
- ⚠★★Power transistor 2SC2579/A/-Y (2SC2579/A/-O)
- AF assembly GWK-185
- ⚠★★Power transistor 2SA1104/A/-Y (2SA1104/A/-O) (2SA1104/A/-P)
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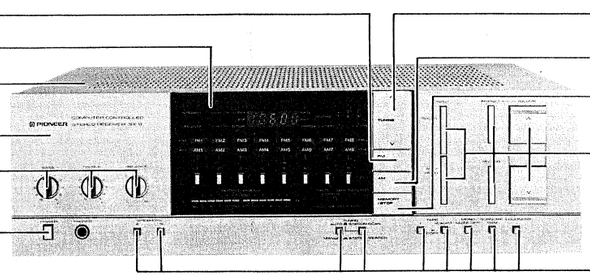
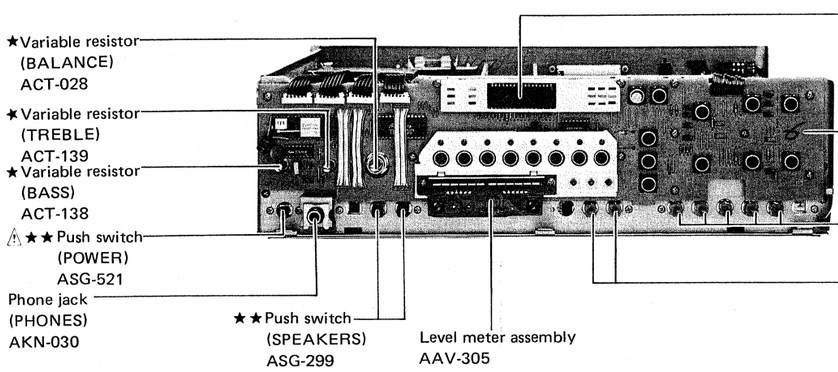
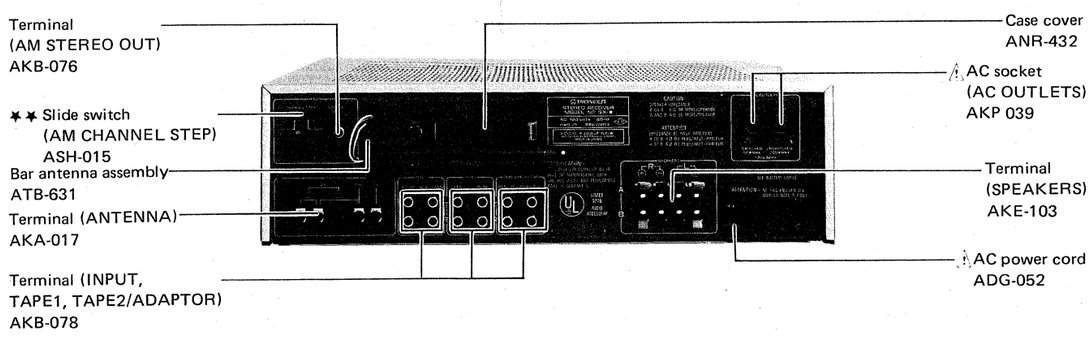


Front View with Panel Removed



Rear Panel View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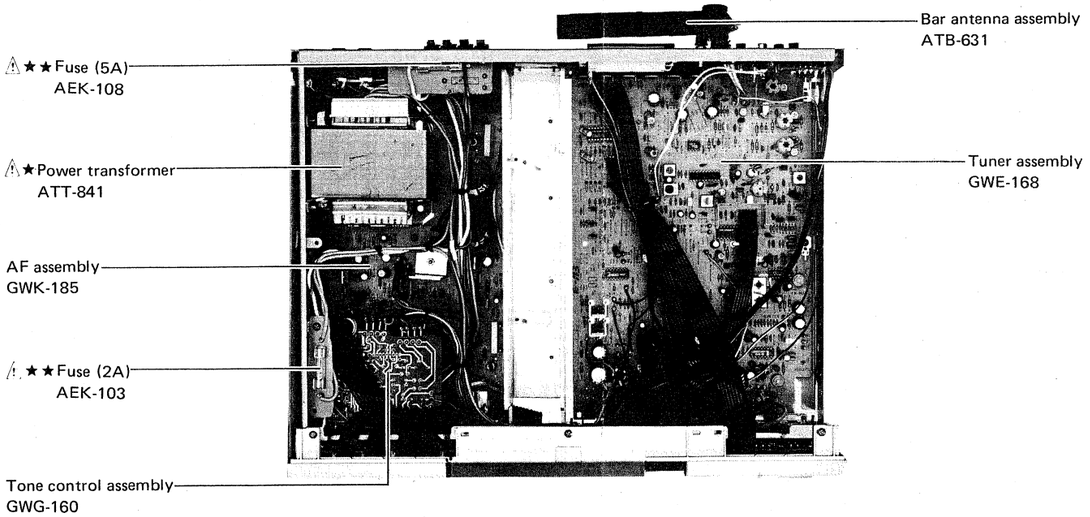
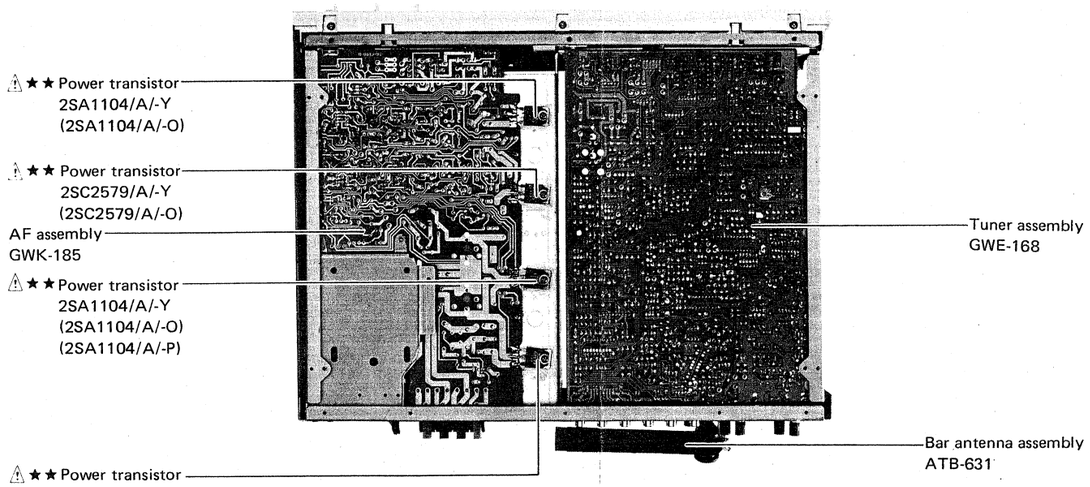


Botton View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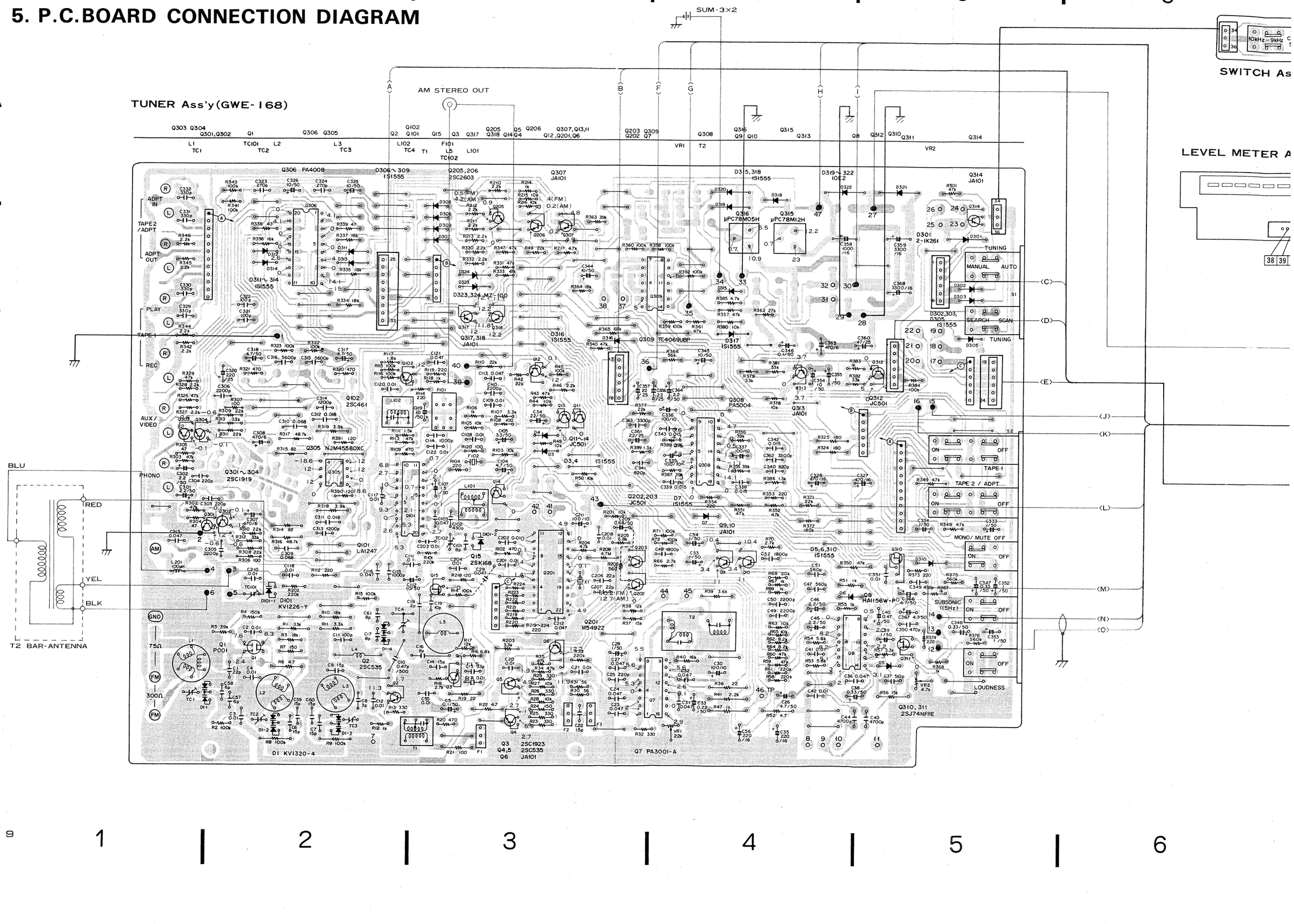
⚠★★Power transistor 2SC2579/A/-Y (2SC2579/A/-O) (2SC2579/A/-P)
Tuner assembly GWE-168
Bar antenna assembly ATB-631

5. P.C.BOARD CONNECTION DIAGRAM



4 | 5 | 6 | 7 | 8 | 9 | 10

SWITCH Ass'y

S3 AM CHANNEL STEP
10kHz - 9kHz

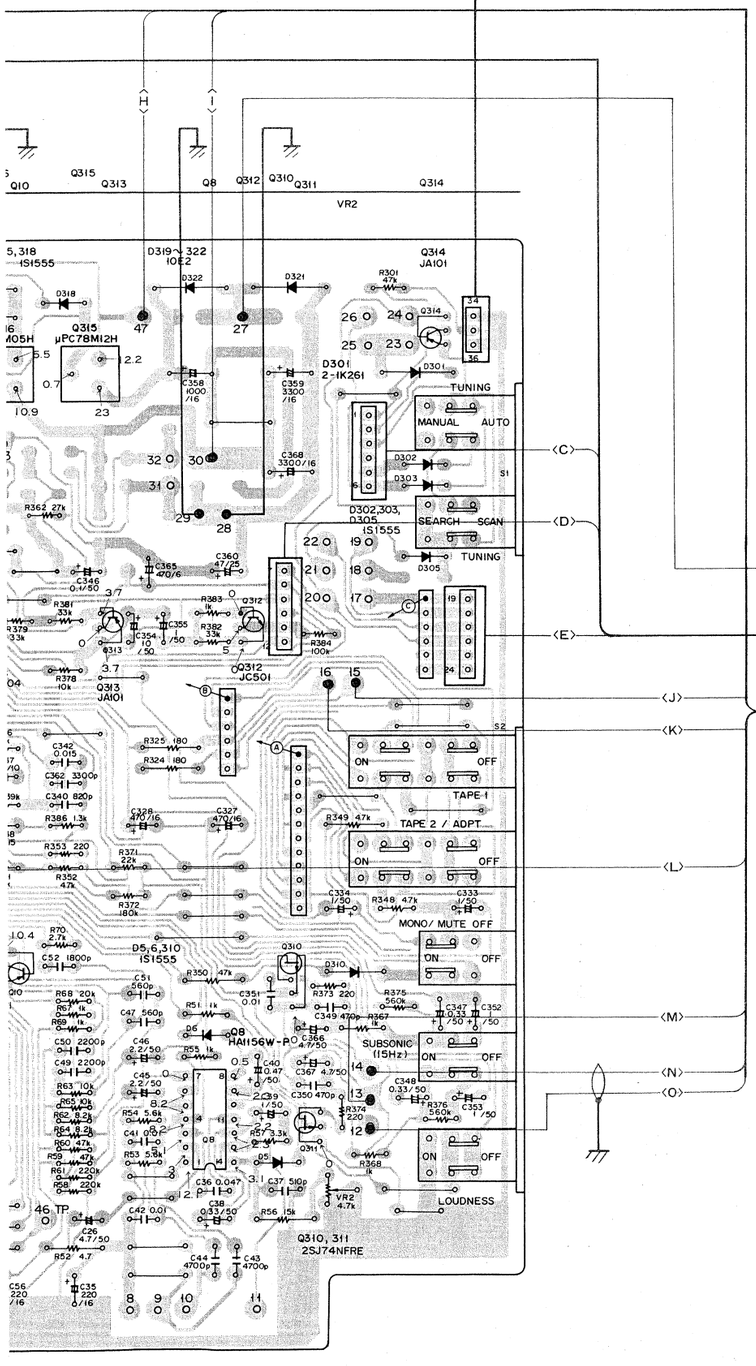
LEVEL METER Ass'y(AAV-305)

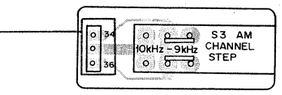
TONE CONTROL Ass'y (GWG-160)

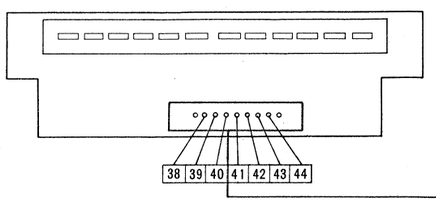
FUSE HOLDER Ass'y(B)

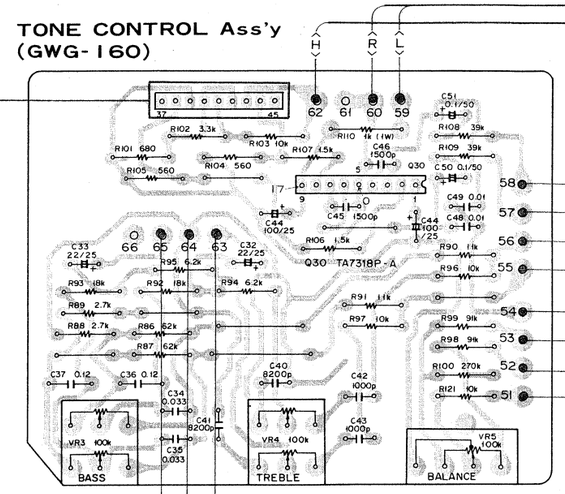
FUSE HOLDER Ass'y(A)

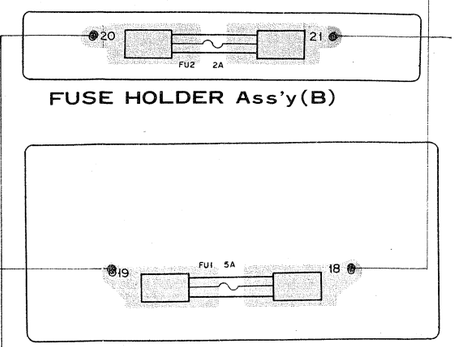
CONTROL Ass'y(AWX-220)

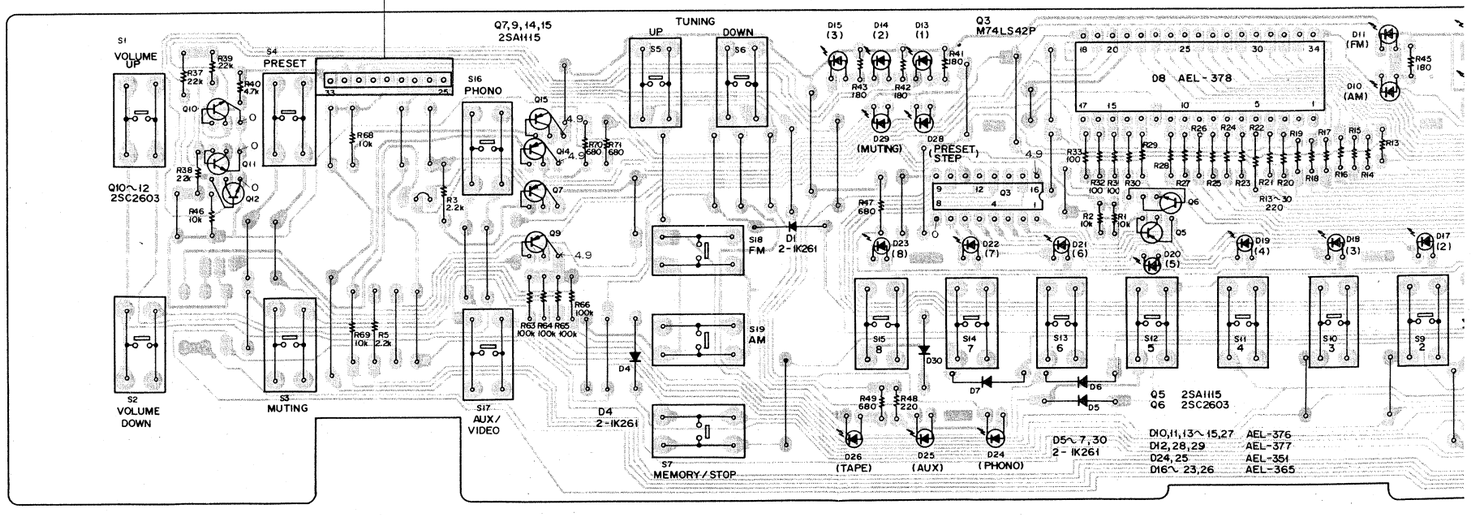












7 8 9 10 11 12

S3 AM CHANNEL STEP

.ss'y

Ass'y(AAV-305)

9 40 41 42 43 44

TONE CONTROL Ass'y (GWG-160)

H R L

62 61 60 59

37 45

R102 3.3k R103 10k R104 560 R105 560 R101 680 R107 1.5k R110 1k (1W) C46 1500p Q30 C45 1500p C44 100/25 R106 1.5k Q30 TA7318P-A

C51 0.47/50 R108 39k R109 39k C50 0.1/50 C49 0.01 C48 0.01 C47 100/25 R90 11k R96 10k R91 11k R97 10k R99 9k R98 9k R100 270k R121 10k

58 57 56 55 54 53 52 51

<S> <T> <U> <V> <W> <J> <K> <F>

66 65 64 63

C33 22/25 C32 22/25 R95 6.2k R94 6.2k R92 18k R93 18k R89 2.7k R88 2.7k R86 62k R87 62k

C37 0.12 C36 0.12 C34 0.033 C41 8200p C35 0.033 C40 8200p C42 1000p C43 1000p

VR3 100k VR4 100k VR5 100k

BASS TREBLE BALANCE

P M Q I

FUSE HOLDER Ass'y(B)

20 21 FU2 2A

FUSE HOLDER Ass'y(A)

19 18 FU1 5A

C2 0.01/AC250 S24 C1 0.01/AC 125 AC POWER CORD

BLU BLU OR BLK OR WHT BRN

T1 PWER TRANSFORMER

SWITCHED 50W MAX UNSWITCHED 200W MAX

R1 2.2M

a b c d e

A B C D

CONTROL Ass'y(AWX-220)

Q10,11,12 Q14,15 Q7,9 Q3 Q6 Q5 Q1 Q4 Q13 Q2

A E B D C

S1 VOLUME UP S2 VOLUME DOWN S3 MUTING S4 PRESET S5 TUNING UP S6 TUNING DOWN S7 MEMORY/STOP S8 FM S9 AM S10 PHONO S11 AUX/VIDEO

Q10~12 2SC2603 Q7,9,14,15 2SA1115 Q3 M74LS42P

D15 (3) D14 (2) D13 (1) D29 (MUTING) D28 PRESET STEP D1 2-1K261 D23 (8) D22 (7) D21 (6) D20 (5) D19 (4) D18 (3) D17 (2) D16 (1) D4 2-1K261 D30 D7 D6 D5 D26 (TAPE) D25 (AUX) D24 (PHONO)

D8 AEL-378

D11 (FM) D10 (AM) D12 (STEREO) D27 (VOLUME)

Q5 2SA1115 Q6 2SC2603

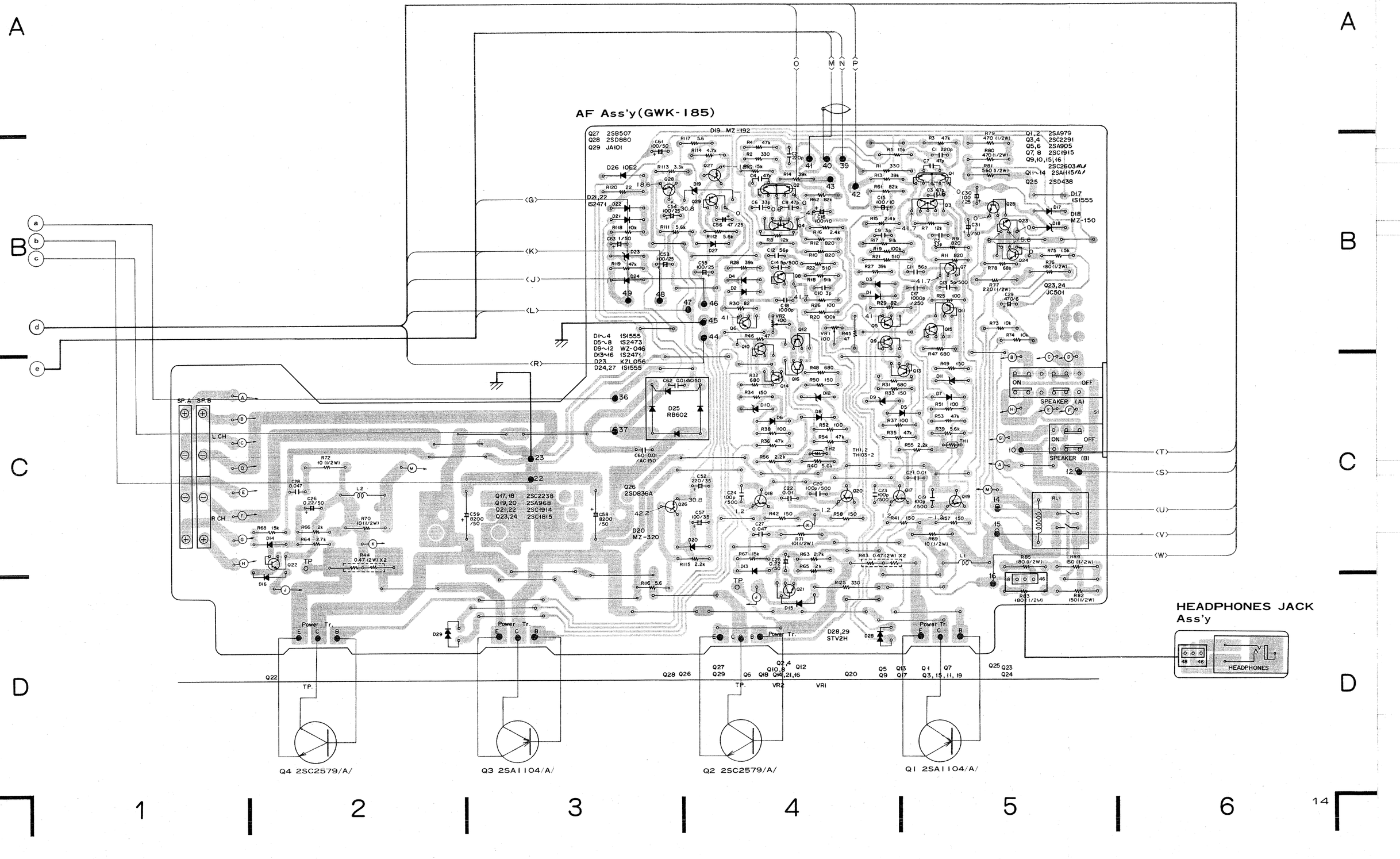
D5~7,30 2-1K261

D10,11,13~15,27 AEL-376 D12,28,29 AEL-377 D24,25 AEL-351 D16~23,26 AEL-365

D2 2-1K261

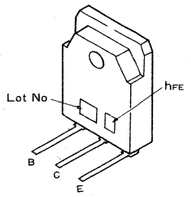
Q1 TD6301P Q4 PD6004 D9 1S1555 Q2 TC4049BP Q13 2SC2603

7 8 9 10 11 12

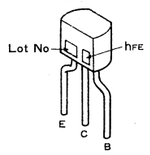

AF Ass'y(GWK-185)
D19 MZ-192
Q27 2SB507
Q28 2SD880
Q29 JA101
Q1,2 2SA979
Q3,4 2SC2291
Q5,6 2SA905
Q7,8 2SC1915
Q9,10,15,16 2SC2603/A/
Q11~14 2SA1115/A/
Q25 2SD438
D17 1S1555
D18 MZ-150
Q23,24 JC501
D1~4 1S1555
D5~8 1S2473
D9~12 WZ-046
D13~16 1S2471
D23 KZL056
D24,27 1S1555
D25 RB602
D26 10E2
D21,22 1S2471
D29 MZ-192
Q17,18 2SC2238
Q19,20 2SA968
Q21,22 2SC1914
Q23,24 2SC1815
Q26 2SD836A
D20 MZ-320
D28,29 STV2H
SP. A SP. B
L CH
R CH
SPEAKER (A)
SPEAKER (B)
ON
OFF
RL1
HEADPHONES JACK Ass'y
HEADPHONES
Power Tr.
TP.
Q4 2SC2579/A/
Q3 2SA1104/A/
Q2 2SC2579/A/
Q1 2SA1104/A/
Q22
Q28 Q26
Q27 Q29
Q6
Q10,8 Q18
Q4,21,16
Q12
Q20
Q5 Q9
Q13 Q17
Q1 Q3,15,11,19
Q7
Q25 Q23 Q24
VR2
VR1

Exteral Appearance of Transistors and ICs

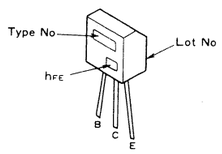
2SA1104/A/
2SC2579/A/



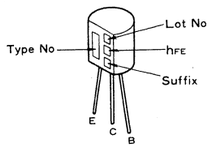
2SA1115/A/
2SC2603/A/



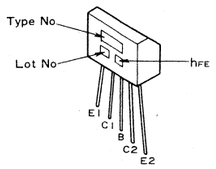
2SC535
2SC461



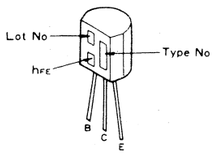
2SA733A
2SC945A



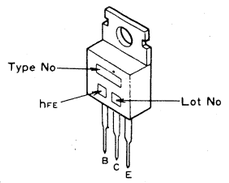
2SC2291



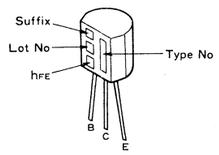
2SA905
2SC1915



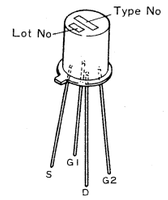
2SC2238
2SA968
2SB834
2SD880
2SD313
2SD836A



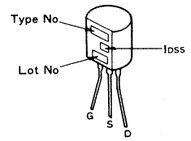
2SC1914A



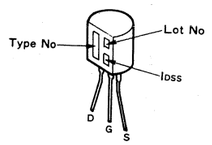
P001



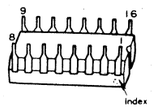
2SK168



2SJ74



PA3001-A
TC4049BP
M74LS42P



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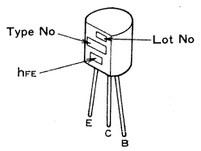

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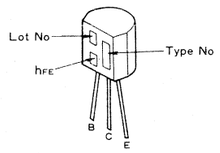

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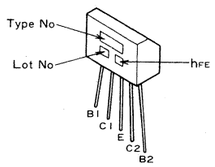

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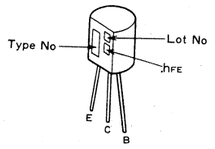
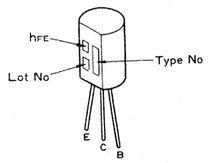
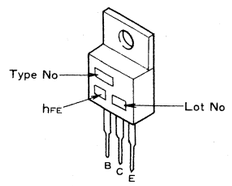
2SA1015



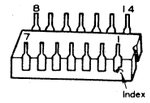
2SC1384



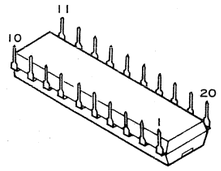
2SB507



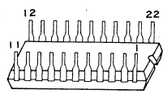
HA1156W-P
TC4069UBP



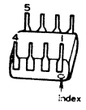
LA1247



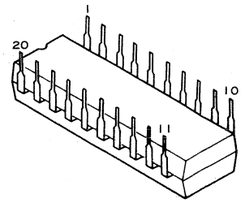
M54922



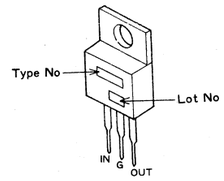
NJM4558DXC
μPC4558C-P



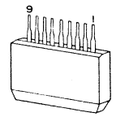
PA4008



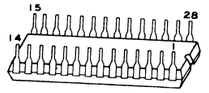
μPC78M12H
μPC78M05H



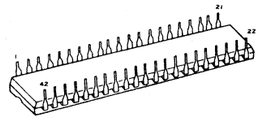
TA7318P



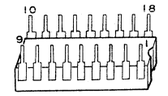
TD6301P



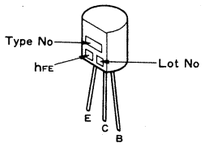
PD6004



PA5004



JC501
JA101



6. MISCELLANEOUS PARTS

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω	*56 × 10¹*	*561 .....*	*RD¼PS* 5 6 1	*J*
47kΩ	*47 × 10³*	*473 .....*	*RD¼PS* 4 7 3	*J*
0.5Ω	*0R5*	*.....*	*RN2H* 0 R 5	*K*
1Ω	*010*	*.....*	*RS1P* 0 1 0	*K*

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621 ....*	*RN¼SR* 5 6 2 1 *F*

- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★ .*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

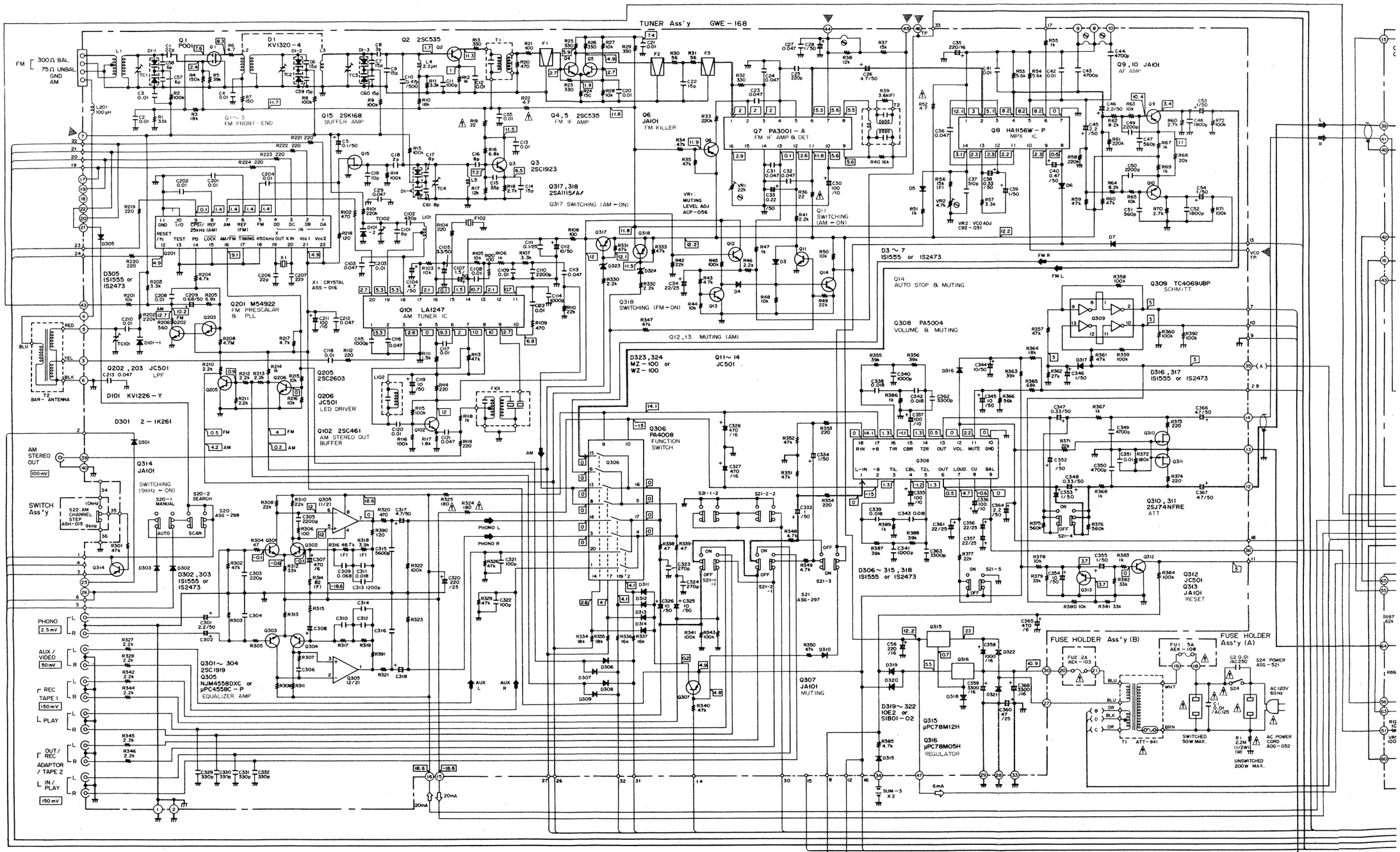
Miscellaneous Parts

Mark	Part No.	Symbol & Description	
⚠ ★	ATT-841	T1	Power transformer
	ATB-631	T2	Bar antenna assembly
⚠★★	AEK-108	FU1	Fuse (5A)
⚠★★	AEK-103	FU2	Fuse (2A)
⚠★★	ASG-521	S1	Push switch (POWER)
⚠	ACG-017	C1	Ceramic capacitor (0.01/AC125V)
⚠	ACG-001	C2	Ceramic capacitor (0.01/AC250V)
⚠	ACN-029	R1	Carbon composition resistor (2.2M, ½W)
⚠★★	2SA1104/A/-Y* (2SA1104/A/-0*) (2SA1104/A/-P*)	Q1,Q3	
⚠★★	2SC2579/A/-Y* (2SC2579/A/-0*) (2SC2579/A/-P*)	Q2,Q4	

*hfe of Q1—Q4 should have the same value.

Mark	Part No.	Symbol & Description
	AKB-076	Terminal (AM STEREO OUT)
⚠	ADG-052	AC power cord
⚠	AKP-039	AC socket (AC OUTLETS)
	GWK-185	AF assembly
	GWE-168	Tuner assembly
	GWG-160	Tone assembly
	AWX-220	Control assembly
	AAV-305	Level meter assembly

7. SCHEMATIC DIAGRAM


TUNER Ass'y GWE – 168
FM 300Ω BAL 75Ω UNBAL GND AM
Q1 PO01
D1 KV1320 – 4
Q2 2SC535
Q1 ~ 3 FM FRONT – END
Q15 2SK168 BUFFER AMP
Q4,5 2SC535 FM IF AMP
Q6 JA101 FM KILLER
Q7 PA3001 – A FM IF AMP & DET
Q8 HA1156W – P MPX IC
Q9,10 JA101 AF AMP
Q317,318 2SA1115/A/
Q317 SWITCHING (AM – ON)
VR1: MUTING LEVEL ADJ ACP – 056
Q11 SWITCHING (AM – ON)
VR2: VCO ADJ CSZ – 031
D3 ~ 7 IS1555 or IS2473
Q14 AUTO STOP & MUTING
Q309 TC4069UBP SCHMITT
Q308 PA5004 VOLUME & MUTING
D316, 317 IS1555 or IS2473
Q201 M54922 FM PRESCALAR & PLL
X1: CRYSTAL ASS – 016
Q101 LA1247 AM TUNER IC
Q318 SWITCHING (FM – ON)
Q12,13 MUTING (AM)
D323,324 WZ – 100 or WZ – 100
Q11 ~ 14 JC501
Q306 PA4008 FUNCTION SWITCH
Q310,311 2SJ74NFRE ATT
Q312 JC501
Q313 JA101 RESET
D305 IS1555 or IS2473
Q202,203 JC501 LPF
D101 KV1226 – Y
Q205 2SC2603
Q206 JC501 LED DRIVER
Q102 2SC461 AM STEREO OUT BUFFER
D301 2 – 1K261
Q314 JA101 SWITCHING (9kHz – ON)
SWITCH Ass'y
S22: AM CHANNEL STEP ASH – 015 9kHz
S20 – 1 MANUAL
S20 – 2 SEARCH
S20: ASG – 298
AUTO
SCAN
Q301 ~ 304 2SC1919
Q305 NJM4558DXC or μPC4558C – P EQUALIZER AMP
D302,303 IS1555 or IS2473
PHONO 2.5mV
AUX / VIDEO 50mV
REC TAPE 1 150mV
PLAY
OUT / REC ADAPTOR / TAPE 2
IN / PLAY 150mV
AM STEREO OUT 100mV
BAR – ANTENNA
PHONO L
PHONO R
AUX L
AUX R
D306 ~ 315, 318 IS1555 or IS2473
S21: AS6 – 297
Q307 JA101 MUTING
D319 ~ 322 10E2 or S1B01 – 02
Q315 μPC78M12H
Q316 μPC78M05H REGULATOR
SUM – 3 X 2
6mA
20mA
FUSE HOLDER Ass'y (B)
FUSE HOLDER Ass'y (A)
FU2: 2A AEK – 103
FU1: 5A AEK – 108
S24: POWER ASG – 521
AC 120V 60Hz
T1 ATT – 841
SWITCHED 50W MAX.
AC POWER CORD ADG – 052
UNSWITCHED 200W MAX.
L
R
VCO TP.
FM R
FM L

1. RESISTORS:
Indicated in Ω, ¼W, 1/8W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ± 10%, (M) : ± 20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
: Signal voltage at 45W + 45W 8Ω output (1kHz)
: DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

SWITCHES:

S1 : VOLUME (UP)	ON	–	OFF
S2 : VOLUME (DOWN)	ON	–	OFF
S3 : MUTING	ON	–	OFF
S4 : PRESET	ON	–	OFF
S5 : TUNING (UP)	ON	–	OFF
S6 : TUNING (DOWN)	ON	–	OFF
S7 : MEMORY / STOP	ON	–	OFF
S8 : STATION CALL (1)	ON	–	OFF
S9 : STATION CALL (2)	ON	–	OFF
S10 : STATION CALL (3)	ON	–	OFF
S11 : STATION CALL (4)	ON	–	OFF
S12 : STATION CALL (5)	ON	–	OFF
S13 : STATION CALL (6)	ON	–	OFF
S14 : STATION CALL (7)	ON	–	OFF
S15 : STATION CALL (8)	ON	–	OFF
S16 : INPUT (PHONO)	ON	–	OFF
S17 : INPUT (AUX / VIDEO)	ON	–	OFF
S18 : FM	ON	–	OFF
S19 : AM	ON	–	OFF
S20 – 1 : TUNING	AUTO	–	MANUAL
S20 – 2 : TUNING	STATION SCAN	–	STATION SEARCH
S21 – 1 : TAPE 1	ON	–	OFF
S21 – 2 : TAPE 2 / ADPT	ON	–	OFF
S21 – 3 : MONO / MUTE OFF	AUTO / ON	–	MONO / OFF
S21 – 4 : SUBSONIC (15Hz)	ON	–	OFF
S21 – 5 : LOUDNESS	ON	–	OFF
S22 : AM CHANNEL STEP	9kHz	–	10kHz
S23 – 1 : SPEAKERS (A)	ON	–	OFF
S23 – 2 : SPEAKERS (B)	ON	–	OFF
S24 : POWER	ON	–	OFF

The underlined indicates the switch position.

AF Ass'y GWK – 185

CONTROL Ass'y AWX – 220

LEVEL METER Ass'y AAV – 305

TONE CONTROL Ass'y GWG – 160

.ECTRICAL PARTS

›rdering resistors, first convert resistance values into code form as shown in owing examples.
When there are 2 effective digits (any digit apart from 0), such as 560 ohm :nd 47k ohm (tolerance is shown by J=5%, and K=10%).
;60Ω 56 × 10¹ 561 ..... RD¼PS 5 6 1 J
;7kΩ 47 × 10³ 473 ..... RD¼PS 4 7 3 J
).5Ω 0R5 ..... RN2H 0 R 5 K
Ω 010 ..... RS1P 0 1 0 K
When there are 3 effective digits (such as in high precision metal film esistors).
;.62kΩ 562 × 10¹ 5621 .... RN¼SR 5 6 2 1 F
mark found on some component parts indicates the importance of the factor of the part. Therefore, when replacing, be sure to use parts of il designation.
›ur Parts Stock Control, the fast moving items are indicated with the ★★ and ★ .
ENERALLY MOVES FASTER THAN ★
assification shall be adjusted by each distributor because it depends on ›umber, temperature, humidity, etc.

sembly (GWE-168)

›RS

›rt No.	Symbol & Description
CDSL 220J 50	C1
KDYF 103Z 50	C2–C4, C12, C13, C20, C21, C108, C109, C117, C118, C120, C122, C201–C204, C208, C210, C351, C55
CDCH 020C 50	C18
CDCH 030C 50	C8
CDTH 080D 50	C16,C17,C61,C101
CDCH 100D 50	C19
CDCH 150J 50	C9
CDRH 150J 50	C6,C7,C14,C59,C60
CDRH 330J 50	C15
CDCH 220J 50	C206,C207
CDSL 150J 50	C22
CDSL 101J 50	C11,C321,C322
CDSL 221J 50	C25,C303–C306
CDSL 271J 50	C323,C324
KDYB 561K 50	C47,C51
KDYB 102K 50	C114,C115
KDYB 182K 50	C48,C52
KDYB 222K 50	C49,C50,C110
KDYB 331K 50	C329–C332
KDYB 821K 50	C340,C341
KDYB 122K 50	C313,C314
KDYB 332K 50	C362,C363
KDYF 473Z 50	C23, C24, C27, C31, C32, C36, C29, C103, C116, C121, C212, C213
KDYX 104M 25	C111
GB R47K 500	C10
CDRH 060D 50	C57, C58
KDYB 471K 50	C349, C350

Mark	Part No.	Symbol & Description
	CEA 0R1M 50L	C5
	CEA R22M 50L	C33
	CEANL R33M 50	C38, C347, C348
	CEA 1R5M 50L	C107
	CEANL R47M 50	C40
	CEA 010M 50L	C28,C53,C54,C355,C346
	CEANL R68M 50	C209
	CEANL 010M 50	C39,C333,C334,C352,C353
	CEANL 2R2M 50	C301,C302
	CEA 2R2M 50L	C45,C46,C364
	CEA 3R3M 50L	C105
	CEANL 4R7M 50	C317,C318,C366,C367,
	CEA 4R7M 50L	C26,C104
	CEANL 100M 50	C325,C326
	CEA 100M 50L	C345,C112,C119,C344,C354
	CEA 220M 25L	C34,C356,C357,C361
	CEA 470M 25L	C360
	CEA 101M 10L	C30,C211,C335–C337
	CEA 221M 16L	C35,C56
	CEA 471M 6L	C307,C308,C365
	CEA 471M 16L	C327,C328
	CEA 221M 25L	C320
	CEA 102M 16L	C358
	CEA 332M 16L	C359,C368
	CQSA 431J 50	C102
	CQSA 511J 50	C37
	CQMA 562K 50	C315,C316
	CQMA 153K 50	C338,C339,C342,C343
	CQMA 473K 50	C113
	CQMA 103J 50	C41,C42
	CQMA 183J 50	C311,C312
	CQMA 683J 50	C309,C310
	CQMA 472K 50	C43,C44

Mark	Part No.	Symbol & Description
	ACM-014	TC1–CT3 Ceramic trimmer
	ACM-006	TC4 Ceramic trimmer
	ACM-015	TC101,TC102 Ceramic trimmer

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD1/8PM □□□J	R2–R5, R7, R12–R18, R20, R23–R35, R37, R38, R40, R42–R46, R48–R51, R53–R55, R57–R72, R101–R120, R201–R205, R210–R224, R301–R305, R308–R313, R320–R323, R326–R334, R336–R348, R351–R368, R371–R373, R375–R392
	RD¼VM □□□J	R306, R307, R374
	RD¼PM □□□J	R1, R6, R8–R11, R21, R41, R47, R206, R208, R335, R349, R350
	RD¼PMF □□□J	R19, R22, R36, R52, R324, R325
	RN¼PQ □□□□F	R39,R56,R314–R319
★	ACP-056	VR1 Semifixed (22k)
★	C92-051	VR2 Semifixed (4.7k)

FILTERS, COILS AND TRANSFORMERS

Mark	Part No.	Symbol & Description
	ATF-107	F1–F3 FM ceramic filter
	ATF-121	F101 AM ceramic filter
	ATF-125	F102 Ceramic resonator
	ATC-141	L1 FM antenna coil
	ATC-142	L2 FM RF coil
	ATC-114	L3 FM RF coil
	ATH-049	L4 RF choke coil
	ATC-115	L5 FM OSC coil
	ATB-067	L101 AM OSC coil
	ATB-068	L102 AM IF coil
	ATE-039	T1 FM IFT
	ATE-043	T2 FM DET transformer

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	P001	Q1
★★	2SC535	Q2,Q4,Q5
★★	JA101 (2SA1115/A/) (2SA733A)	Q6, Q9, Q10, Q307, Q313, Q314, Q317, Q318
★★	2SC1923	Q3
★★	PA3001-A	Q7
★★	HA1156W-P	Q8
★★	JC501 (2SC2603/A/) (2SC945A)	Q11–Q14, Q202, Q203, Q206, Q312
★★	2SK168	Q15
★★	LA1247	Q101
★★	2SC461	Q102
★★	M54922	Q201
★★	2SC2603/A/-F	Q205
★★	2SC1919	Q301–Q304
★★	NJM4558DXC (μPC4558C-P)	Q305
★★	PA4008	Q306
★★	TC4069UBP	Q309
★★	PA5004	Q308
★★	2SJ74NFRE-BL* (2SJ74NFRE-V*)	Q310,Q311
★★	μPC78M12H	Q315
★★	μPC78M05H	Q316
★	KV1320A-4**	D1 (D1A-D1D)
★	KV1226-Y***	D101 (D101A,D101B)
★	1S1555 (1S2473)	D3–D7,D302,D303,D305–D318
★	2-1K261	D301
⚠ ★	10E2 (SIB01–02)	D319–D322
★	MZ-100 (WZ-100)	D323,D324

* *Idss of Q310, Q311 should have the same value.*
** *D1(KV1320A-4) consists of four vari-cap diodes with the identical characteristics. When replacing either of them, first split the new D1 into four pieces (D1A-D1D), and replace both of them by new D1A, D1B, D1C and D1D at the same time in order to match their characteristics.*
*** *D101 (KV1226-Y) consists of two vari-cap diodes with the identical characteristics. When replacing either of them, first split the new D101 into two pieces (D101A and D101B), and replace both of them by new D101A and D101B at the same time in order to match their characteristics.*

OTHERS

Mark	Part No.
★★	ASG-298
★★	ASG-297
★	ASS-016
	AKA-017
	AKB-078

Switch Assembly

Mark	Part No.
★★	ASH-015

AF Assembly (GW

CAPACITORS

Mark	Part No.
	CCDSL 221J 5
	CCDSL 101K 5
	CCDSL 030C 5
	CCDSL 330J 5
	CCDSL 470J 5
	CCDSL 560J 5
	CCDSL 050D 5
	CQMA 103K 5
	CQMA 473K 5
	CQMA 102K 2
	CEA R22M 50
	CEA 010M 50
	CEA 101M 10
	CEA 101M 25
	CEA 101M 35
	CEA 470M 25
	CEA 221M 35
	CEA 471M 6L
	CEA 101M 50
⚠	ACG-019
	ACH-215

RESISTORS

NOTE: When ordering into code form,

Mark	Part No.
	RD½PS □□□J
⚠	RD½PSF □□□
⚠	RD¼PMF □□[
	RD¼PM □□□J
	ACN-114
★	C92-063
	TH103-2

OTHERS

Mark	Part No.	Symbol & Description
★★	ASG-298	S1 Push switch (TUNING)
★★	ASG-297	S2 Push switch (TAPE, MONO/ MUTE OFF, SUBSONIC, LOUDNESS
★	ASS-016	X1 Crystal resonator (4.5MHz)
	AKA-017	Terminal (ANTENNA)
	AKB-078	Terminal(INPUT, TAPE1, TAPE2/ADAPTOR)

Switch Assembly

Mark	Part No.	Symbol & Description
★★	ASH-015	S3 Slide switch (AM CHANNEL STEP

AF Assembly (GWK-185)

CAPACITORS

Mark	Part No.	Symbol & Description
	CCDSL 221J 50	C1,C2
	CCDSL 101K 500	C19,C20,C23,C24
	CCDSL 030C 50	C9,C10
	CCDSL 330J 50	C5,C6
	CCDSL 470J 50	C3,C4,C7,C8
	CCDSL 560J 50	C11,C12
	CCDSL 050D 500	C13,C14
	CQMA 103K 50	C21,C22
	CQMA 473K 50	C27,C28
	CQMA 102K 250	C17,C18
	CEA R22M 50L	C25,C26
	CEA 010M 50L	C31,C63
	CEA 101M 10L	C15,C16
	CEA 101M 25L	C30,C53–C55
	CEA 101M 35L	C57
	CEA 470M 25L	C56
	CEA 221M 35L	C52
	CEA 471M 6L	C29
	CEA 101M 50L	C61
⚠	ACG-019	C60,C62 Ceramic (0.01/AC150V)
	ACH-215	C58,C59 Electrolytic (8200/50V)

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD½PS □□□J	R76,R77,R79–R85
⚠	RD½PSF □□□J	R69–R72
⚠	RD¼PMF □□□J	R25, R26, R29–R34, R41, R42, R47–R50, R57, R58, R63, R64, R116, R117, R120, R125
	RD¼PM □□□J	R1–R22, R27, R28, R35–R40, R45, R46, R51–R56, R61, R62, R65–R68, R73–R75, R78, R111–R115, R118, R119, R121
	ACN-114	R43, R44 Wire wound (0.47,2W×2)
★	C92-063	VR1,VR2 Semifixed (47)
	TH103-2	Th1,Th2

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SA979	Q1,Q2
★★	2SC2291	Q3,Q4
★★	2SA905	Q5,Q6
★★	2SC1915	Q7,Q8
★★	2SA1115/A/-E* (2SA1115/A/-F*)	Q11–Q14
★★	2SC2603/A/-E* (2SC2603/A/-F*)	Q9,Q10,Q15,Q16

*hfe of Q9–Q16 should have the same value.

★★	2SC2275-Q* (2SC2275-R*)	Q17,Q18
★★	2SA985-Q* (2SA985-R*)	Q19,Q20

*hfe of Q17–Q20 should have the same value.

★★	2SC1914A	Q21,Q22
★★	JC501 (2SC2603/A/) (2SC1815BL)	Q23,Q24
★★	2SD438-F (2SC1384)	Q25
★★	2SD836A	Q26
★★	2SB507 (2SB834)	Q27
★★	2SD880 (2SD313)	Q28
★★	JA101 (2SA1115/A/) (2SA1015)	Q29
★	1S1555 (1S2473)	D1–D4,D17,D24,D27
⚠ ★	1S2473	D5–D8
★	1S2471	D13–D16,D21,D22
★	WZ-046 (MZ-047)	D9–D12
★	MZ-150	D18
★	MZ-192 (WZ-192)	D19
★	WZ-290	D20
★	KZL056	D23
⚠ ★	10E2 (SIB01–02)	D26
⚠ ★	RB602	D25
	STV2H-O	D28,D29

OTHERS

Mark	Part No.	Symbol & Description
★★	ASG-299	S1 Push switch (SPEAKERS)
★★	ASR-033	RL1 Relay
	AKE-103	Terminal (SPEAKERS A,B)
	ABA-258	Screw (for heat sink of D25)

Tone assembly (GWG-160)

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 220M 25L	C32, C33
	CEA 0R1M 50L	C50,C51
	CEA R47M 50L	C47
	CEA 101M 25L	C44
	CQMA 102J 50	C42,C43
	CQMA 822J 50	C40,C41
	CQMA 333J 50	C34,C35
	CQMA 124J 50	C36,C37
	CKDYB 152K 50	C45,C46
	CKDYB 103Z 50	C48,C49

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	ACT-138	VR3 Veriable (BASS)
★	ACT-139	VR4 Variable (TREBLE)
★	ACT-028	VR5 Variable (BALANCE)
	RS1P 102J	R110
	RD¼PM □□□J	R86–R109

SEMICONDUCTOR

Mark	Part No.	Symbol & Description
★★	TA7318P-A (TA7318P-1)	Q30

Control Assembly (AWX-220)

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA 100M 50L	C1
	CKDYB 102K 50	C3
	CKDYB 391K 50	C2
	CEA 101M 25L	C4

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD1/8PM □□□J	R1, R2, R6–R21, R23–R34, R36–R43, R45, R46, R48–R55, R57–R59 R61, R63–R67, R70, R71
	RD¼PM □□□J	R3, R5, R22, R47, R60, R62, R68, R69
⚠	RD¼PMF □□□J	R35

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	TD6301P	Q1
★★	TC4049BP	Q2
★★	M74LS42P	Q3
★★	PD6004	Q4
★★	2SA1115/A/-F	Q9
★★	2SA1115/A/	Q5,Q7,Q14,Q15
★★	2SC2603/A/	Q6,Q10–Q13
★	2–1K261	D1–D7, D30
★	AEL-378	D8
★	1S1555 (1S2473)	D9
★	AEL-376	D10,D11,D13–D15,D27
★	AEL-377	D12,D28,D29
★	AEL-365	D16–D23,D26
★	AEL-351	D24,D25

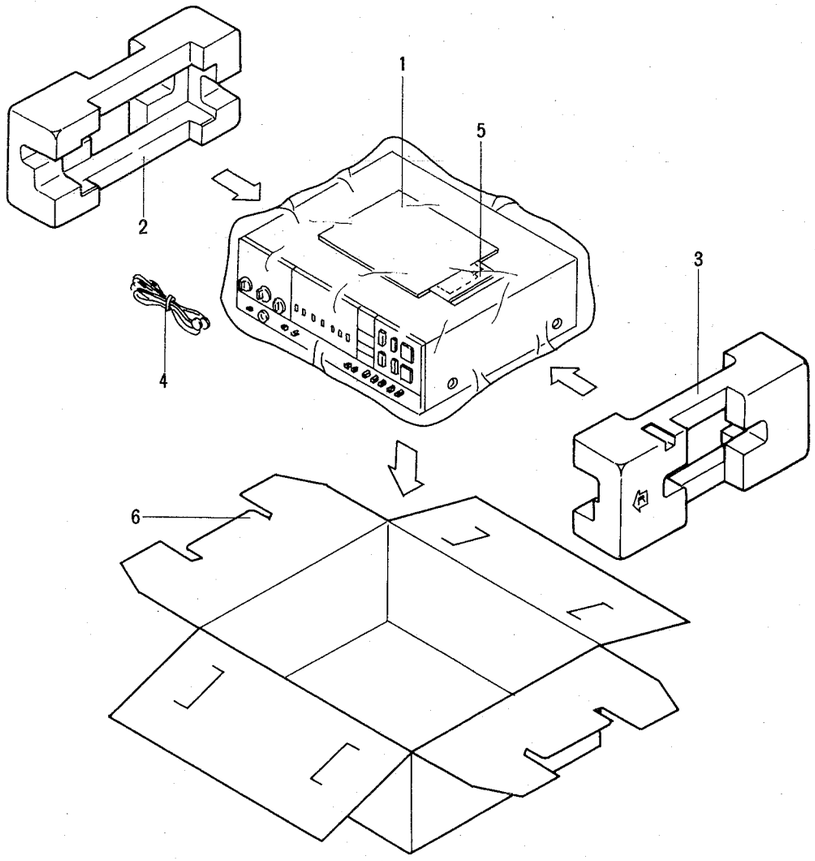
OTHERS

Mark	Part No.	Symbol & Description
★	ASS-017	X1 Ceramic resonator (500kHz)
★★	ASG-177	S1–S19 Tact switch (VOLUME, MUTING, PRESET, TUNING, MEMORY/STOP, STATION CALL 1 – 8, FUNCTION)

Headphones Jack Assembly

Mark	Part No.	Symbol & Description
	AKN-030	Phones jack (PHONES)

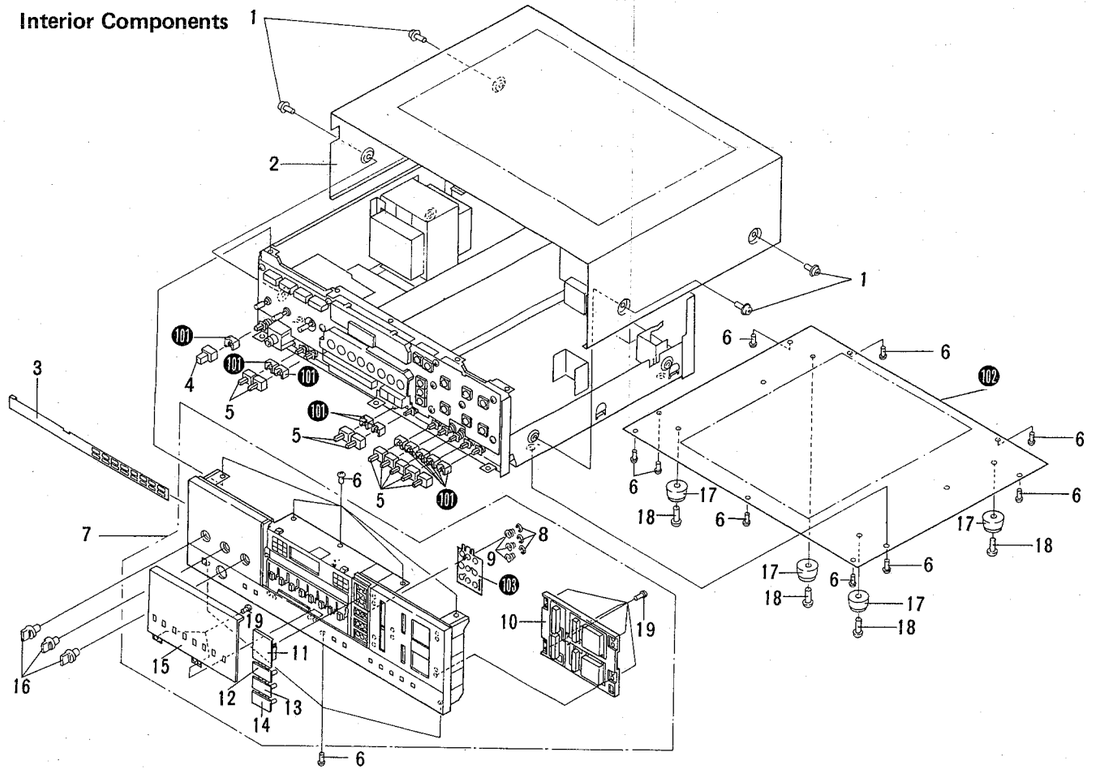
9. PACKING



Mark	No.	Part No.	Description
	1.	ARB-437	Operating instructions (English)
	2.	AHA-300	Side pad L
	3.	AHA-301	Side pad R
	4.	ADH-004	FM T-type antenna
	5.	AAN-028	Station card
	6.	AHD-952	Packing case

10. EXPLODED VIEWS

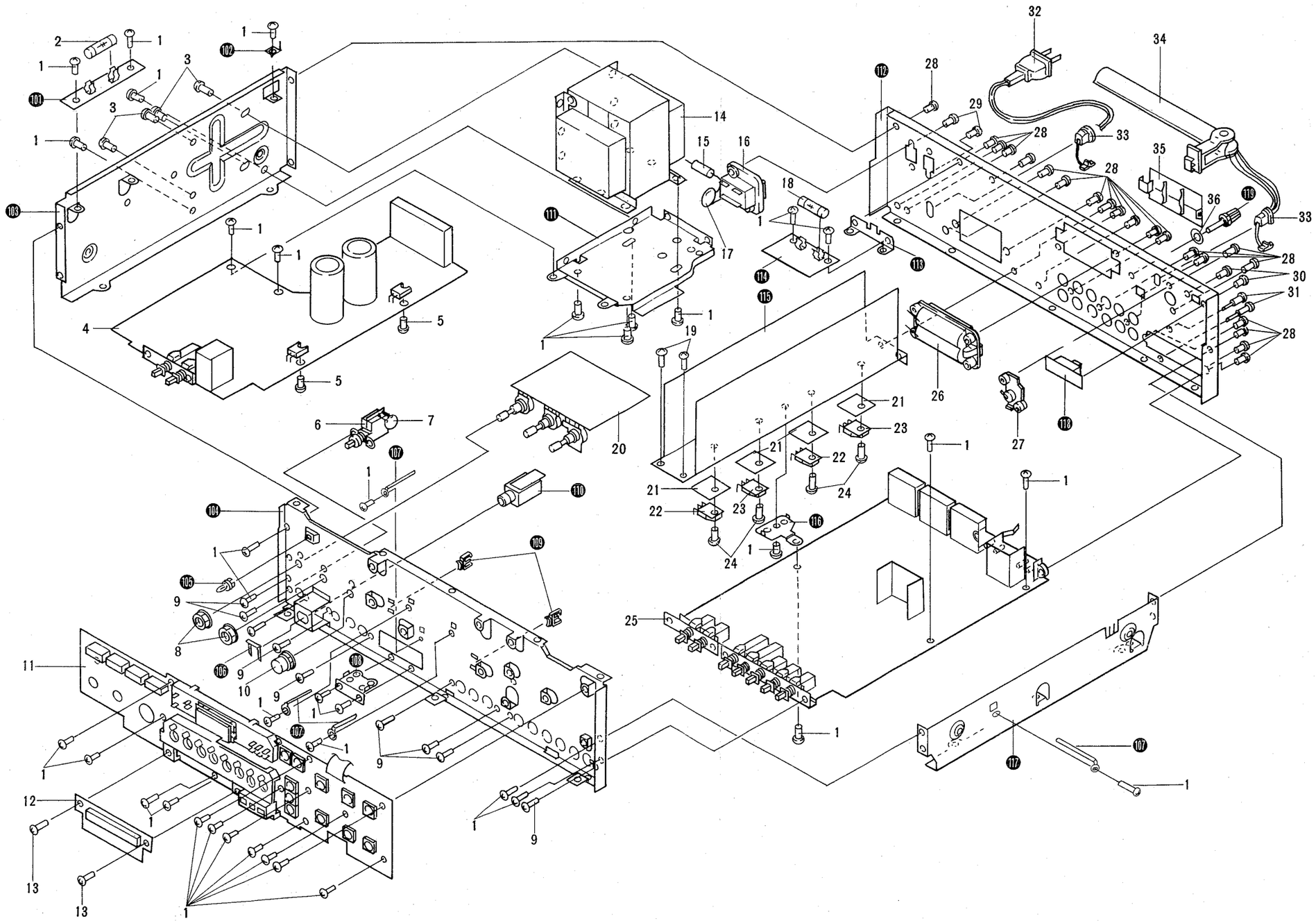
Interior Components



NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★ .*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	ABA-193	Screw		13.	AAD-403	Knob (AM)
	2.	ANE-360	Top cover		14.	AAD-404	Knob (MEMORY/STOP)
	3.	ANR-450	Slider assembly		15.	ANR-408	Display cover
	4.	AAD-406	Knob (POWER)				
	5.	AAD-405	Knob		16.	AAB-274	Knob (BASS, TREBLE, BALANCE)
	6.	VBZ30P060FMC	Screw (3X6)		17.	AEC-178	Foot assembly
	7.	ANM-064	Front panel assembly		18.	VTZ40P100FMC	Screw (3X10)
	8.	YE40FUC	E type washer ϕ4		19.	BBZ26P050FMC	Screw (2.6X5)
	9.	ABH-088	Coiled spring				
	10.	AAD-407	Knob array		101.		Flexible joint
					102.		Bottom plate
	11.	AAD-401	Knob (TUNING)		103.		Plate
	12.	AAD-402	Knob (FM)				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Parts List of Interior Components

Mark	No.	Part No.	Description
	1.	VBZ30P060FMC	Screw (3X6)
⚠ ★★	2.	AEK-103	Fuse (2A)
	3.	BMZ40P080FZB	Screw (4X8)
	4.	GWK-185	AF assembly
	5.	ABA-234	Screw (3X12)
⚠ ✱✱	6.	ASG-521	Push switch (POWER)
⚠	7.	ACG-001	Ceramic capacitor
	8.	ABN-048	Nut (M9)
	9.	VMZ30P060FMC	Screw (3X6)
	10.	ABN-028	Nut
	11.	AWX-220	Control assembly
	12.	AAV-305	Level meter assembly
	13.	BBZ30P060FZK	Screw (3X6)
⚠ ✱	14.	ATT-841	Power transformer
⚠	15.	ACN-029	Carbon composition resistor
⚠	16.	AKP-039	AC socket (AC OUTLETS)
⚠	17.	ACG-017	Ceramic capacitor
⚠ ✱✱	18.	AEK-108	Fuse (5A)
	19.	VTZ40P100FMC	Screw (4X10)
	20.	GWG-160	Tone control assembly
	21.	AEC-818	Insulator
⚠ ✱✱	22.	2SA1104/A/-Y*	Power transistor
		(2SA1104/A/-O*)	
		(2SA1104/A/-P*)	
⚠ ✱✱	23.	2SC2579/A/-Y*	Power transistor
		(2SC2579/A/-O*)	
		(2SC2579/A/-P*)	

*hfe of 2SA1104/A/ and 2SC2579/A/ should have the same value.

24.	ABA-258	Screw
25.	GWE-168	Tuner assembly
26.	AXC-013	Battery case assembly
27.	AKB-076	Terminal (AM STEREO OUT)
28.	BBT30P080FZK	Screw (3X8)
29.	MTZ30P100FZK	Screw (3X10)
30.	PMZ30P060FZB	Screw (3X6)
31.	ABA-176	Screw

Mark	No.	Part No.	Description
⚠	32.	ADG-052	AC power cord
	33.	AEC-327	Strain relief
	34.	ATB-631	Bar antenna assembly
	35.	ANR-432	Case cover
	36.	WA35F100N080	Washer
	101.		Fuse holder assembly B
	102.		Ground terminal 2-P
	103.		Side frame L
	104.		Panel stay
	105.		P.C. Board spacer
	106.		Mounting plate
	107.		Clamper
	108.		Heat sink holder
	109.		Wire saddle
	110.		Headphones jack assembly
	111.		Transformer frame
	112.		Rear panel
	113.		P.C. Board holder A
	114.		Fuse holder assembly A
	115.		Heat sink
	116.		P.C. Board holder B
	117.		Side frame R
	118.		Switch assembly
	119.		Terminal (GND)

11. ADJUSTMENTS

FM Tuner

- Connect the FM signal generator (FM SG) to the FM ANTENNA 300Ω terminal through a 300Ω dummy antenna.
- Set the AUTO/MANUAL switch to the MANUAL position, the FM (FUNCTION) switch to the ON position and the MODE MONO (MUTE OFF) switch to the MONO (MUTE OFF) position.

(*1) Tune the FM SG to the SX-6.

(*2) Connect the FM multiplex stereo signal generator to the FM SG external modulator terminal. Set the modulation to Main 1kHz/L+R/±67.5kHz deviation, Pilot 19kHz/±7.5kHz deviation.

Step	FM SG(400Hz,±75kHz deviation)		SX-6 Frequency display	Adjustment point	Adjustment procedure
	Frequency	Level			
1	No signal		87.50MHz	L5	7.2V DC between terminal no.7 and ground.
2	No signal		108.00MHz	TC4	24V DC between terminal no.7 and ground.
3	Repeat steps 1 and 2 until both specifications are correct.				
4	90.0MHz (*1)	60dB	90.00MHz	L1,L2,L3	Adjust until DC voltage between terminal no.46 and ground is maximum.
5	106.0MHz (*1)	60dB	106.00MHz	TC1,TC2,TC3	
6	Repeat steps 4 and 5 until maximum sensitivity is attained.				
7	98.0MHz (*1)	60dB	98.00MHz	T1	Adjust until DC voltage between terminal no.46 and ground is maximum.
8	98.000MHz	60dB	98.00MHz	T2 (CENTER)	0V DC between terminal no. 44 and no.45 minimum.
9	98.000MHz	60dB	98.00MHz	T2 (DIST)	Adjust until distortion at TAPE 1 REC terminal is minimum.
10	Repeat steps 8 and 9 until both requirement are satisfied.				
11	Set the MODE MONO switch to the STEREO position.				
12	98.0MHz (*1)	60dB (not modulation)	98.00MHz	VR2	Adjust signal at terminal no.11 to 19kHz (±100Hz).
13	98.0MHz (*1) Set to stereo modulation (*2)	60dB	98.00MHz	T1 (within ±90°)	Adjust until distortion at TAPE 1 REC L or R terminal is minimum.
14	98.0MHz (*1) Set to stereo modulation (*2)	31dB	98.00MHz	VR1	Obtain a position just prior to activation of the muting circuit and light up the STEREO indicator.

AM Tuner

- Connect the AM signal generator (AM SG) to the AM ANTENNA terminal through a 10kΩ resistor.
- Set the AM (FUNCTION) switch to the ON position and AM CHANNEL STEP switch (on the rear panel) to 10kHz position.

(*3) Tune the AM SG to the SX-6.

Step	AM SG (400Hz,30% modulation)		SX-6 Frequency display	Adjustment point	Adjustment procedure
	Frequency	Level			
1	No signal		520kHz	L101	2V DC between terminal no.7 and ground.
2	No signal		1620kHz	TC102	24V DC between terminal no.7 and ground.
3	Repeat steps 1 and 2 until both specifications are correct.				
4	600kHz (*3)	40dB	600kHz	Bar antenna	Adjust until DC voltage between terminal no.46 and ground is maximum.
5	1400kHz (*3)	40dB	1400kHz	TC101	
6	Repeat steps 4 and 5 until maximum sensitivity is attained.				

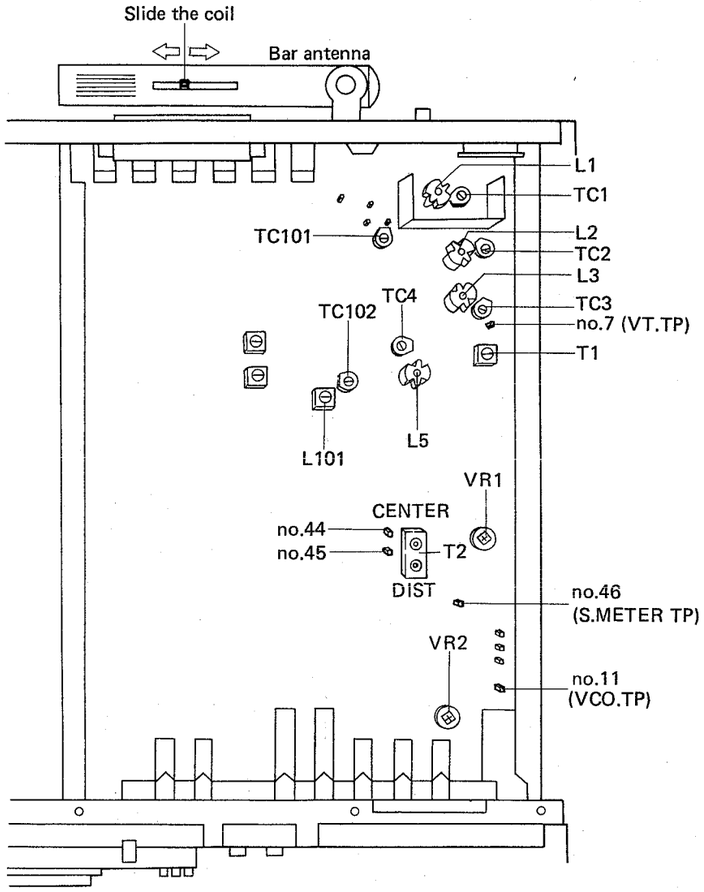

Fig. 11-1 Adjustment and measuring points

Idel Current Adjustment

- Turn VR1 (L) and VR2 (R) fully around in the counter-clockwise.
- Without any load or input signal, turn to POWER switch ON and let stand for 10 minutes.
- Set the SPEAKERS A switch to the ON position.

Adjustment Point	Prescribed value	Measuring terminal
VR1 (L)	30mV±15mV	Between terminal TP-L (+) and SPEAKERS A (L+) terminal on the rear panel.
VR2 (R)	30mV±15mV	Between terminal TP-R (+) and SPEAKERS A (R+) terminal on the rear panel.

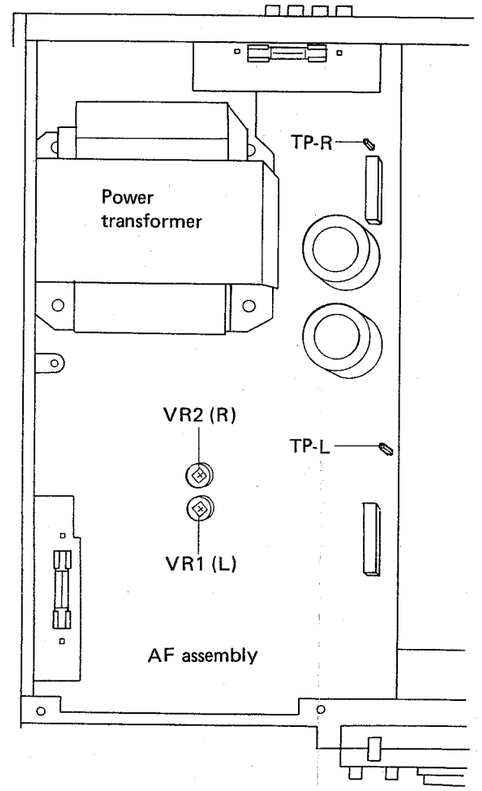

Fig. 11-2 Adjustment and measuring points

11. RÉGLAGE

Tuner FM

- Raccorder le générateur de signaux (FM SG) sur la borne de l'antenne FM (FM ANTENNA) 300Ω par l'intermédiaire d'une antenne factice 300Ω.
- Régler le commutateur AUTO/MANUAL sur la position MANUAL, le commutateur FM (FUNCTION) sur la position ON et le commutateur MODE MONO (MUTE OFF) sur la position MONO (MUTE OFF).

(*1) Accorder le générateur de signaux FM sur SX-6.

(*2) Raccorder le générateur de signaux FM stéréo multiplex sur la borne du modulateur externe FM SG. Régler la modulation sur déviation principale 1kHz / gauche+droit (L+R) / ±67,5kHz, déviation de synchronisation 19kHz / ±7,5kHz.

Phase	FM SG (400Hz, ±75kHz déviation)		Affichage de fréquence SX-6	Point de réglage	Méthode de réglage
	Fréquence	Niveau			
1	Pas de signal		87,50MHz	L5	7.2V CC entre la borne nº 7 et la borne de terre.
2	Pas de signal		108,00MHz	TC4	24V CC entre la borne nº 7 et la borne de terre.
3	Répéter les phases 1 et 2 afin d'obtenir les deux caractéristiques correctes.				
4	90,0MHz (*1)	60dB	90,00MHz	L1, L2, L3	Régler afin d'obtenir la tension CC maximum entre la borne nº 46 et la borne de terre.
5	106,0MHz (*1)	60dB	106,00MHz	TC1. TC2, TC3	
6	Répéter les phases 4 et 5 afin d'obtenir la sensibilité maximum.				
7	98,0MHz (*1)	60dB	98,00MHz	T1	Régler afin d'obtenir la tension CC maximum entre la borne nº 46 et la borne de terre.
8	98,000MHz (*1)	60dB	98,00MHz	T2 (CENTRE)	0V CC minimum entre la borne nº 44 et la borne nº 45.
9	98,000MHz (*1)	60dB	98,00MHz	T2 (DIST)	Régler afin d'obtenir la distorsion minimum à la borne TAPE 1 REC.
10	Répéter les phases 8 et 9 afin d'obtenir les deux conditions requises.				
11	Régler le commutateur MODE MONO sur la position STEREO.				
12	98,0MHz (*1)	60dB (pas de modulation)	98,00MHz	VR2	Régler le signal à la borne nº 11 sur 19kHz (±100Hz).
13	98,0MHz (*1) Régler sur modulation stéréo (*2)	60dB	98,00MHz	T1 (entre ±90°)	Régler afin d'obtenir la distorsion minimum à la borne TAPE 1 REC L ou R.
14	98,0MHz (*1) Régler sur modulation stéréo (*2)	31dB	98,00MHz	VR1	Régler sur la position précédant l'excitation du circuit d'atténuation el allumant l'indicateur STEREO.

Tuner AM

- Raccorder le générateur de signaux AM (AM SG) sur la borne d'antenne AM (AM ANTENNA) par l'intermédiaire d'un résisteur de 10KΩ.
- Régler le commutateur AM (FUNCTION) sur la position ON et le commutateur AM CHANNEL STEP (situé sur le panneau arrière) sur la position 10kHz.

(*3) Accorder le générateur de signaux AM SG sur SX-6.

Phase	AM SG (400Hz, 30% modulation)		Affichage de fréquence SX-6	Point de réglage	Méthode de réglage
	Fréquence	Niveau			
1	Pas de signal		520kHz	L101	2V CC entre la borne nº 7 et la borne de terre.
2	Pas de signal		1620kHz	TC102	24V CC entre la borne nº 7 et la borne de terre.
3	Répéter les phases I et 2 afin d'obtenir les deux caractéristiques correctes.				
4	600kHz (*3)	40dB	600kHz	Antenne -tige	Régler afin d'obtenir la tension CC maximum entre la borne nº 46 et la borne de terre.
5	1400kHz (*3)	40dB	1400kHz	TC101	
6	Répéter les phases 4 et 5 afin d'obtenir la sensibilité maximum.				

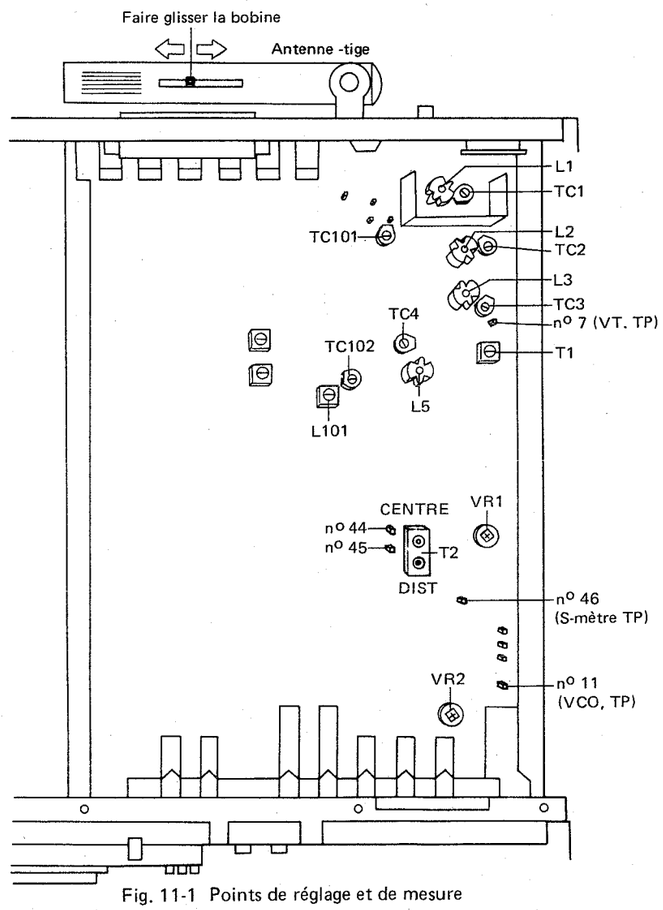

Fig. 11-1 Points de réglage et de mesure

Réglage du courant déwatté

- Tourner VR1 (gauche) et VR2 (droit) complètement dans le sens contraire des aiguilles d'une montre.
- Régler l'interrupteur général (POWER) sur ON sans appliquer de charge ou de signal d'entrée et laisser en position d'attente pendant 10 minutes.
- Régler le sélecteur d'enceintes A (SPEAKERS) sur la position ON.

Point de réglage	Valeur prescrite	Borne de mesure
VR1 (gauche)	30mV±15mV	Entre la borne d'épreuve point – gauche (TP-L) (+) et la borne SPEAKERS A (gauche+) sur le panneau arrière.
VR2 (droit)	30mV±15mV	Entre la borne d'épreuve point – droit (TP-R) (+) et la borne SPEAKERS A (droit+) sur le panneau arrière.

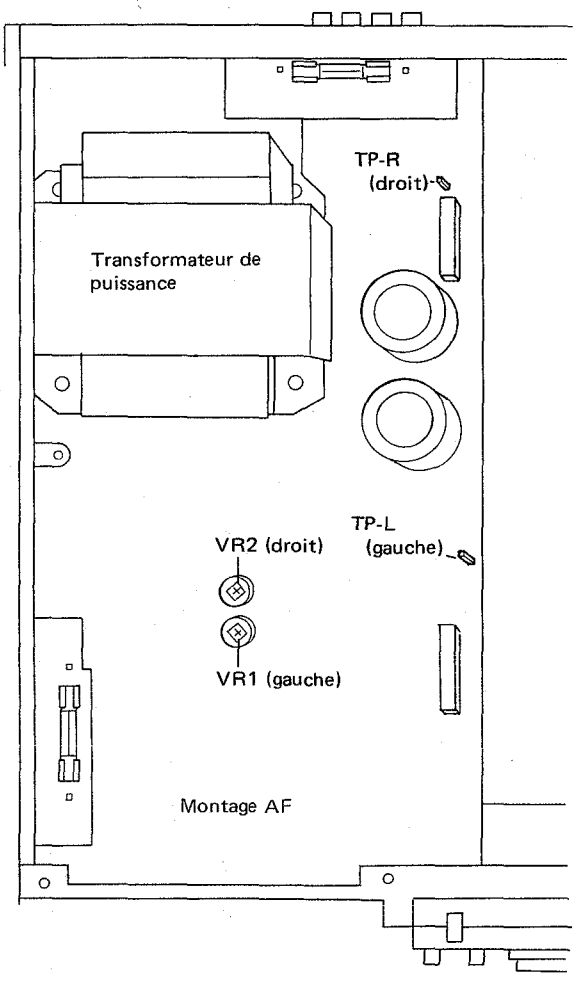

Fig. 11-2 Points de réglage et de mesure

11. AJUSTE

Sintonizador de FM

- Conectar el generador de señales de FM (FM SG) al terminal FM ANTENNA 300Ω a través de una antena ficticia de 300ohmios.
- Conectar el selector AUTO/MANUAL en la posición MANUAL, el selector de función de FM en la posición ON y el de modo de MONO (MUTE OFF) en la posición MONO (MUTE OFF).

(*1) Sintonizar el FM SG con el SX-6.

(*2) Conectar un generador de señales estereofónicas de FM multiplex al terminal modulador exterior del FM SG. Ajustar la modulación a Principal 1kHz / Izq. + Der. (L+R) / ±67,5kHz de desviación; Piloto 19kHz / ±7,5kHz de desviación.

Paso	FM SG (400Hz, ±75kHz desviación)		Frecuencímetro del SX-6	Punto de ajuste	Procedimientos de ajuste
	Frecuencia	Nivel			
1	Sin señal		87,50MHz	L5	7,2V CC entre el terminal no. 7 y masa.
2	Sin señal		108,00MHz	TC4	24V CC entre el terminal no. 7 y masa.
3	Repetir los pasos 1 y 2 hasta que ambas especificaciones sean correctas.				
4	90,0MHz (*1)	60dB	90,00MHz	L1, L2, L3	Ajustar hasta que la tensión de CC entre el terminal no. 46 y masa sea la máxima.
5	106,0MHz (*1)	60dB	106,00MHz	TC1 TC2, TC3	
6	Repetir los pasos 4 y 5 hasta lograrse la máxima sensibilidad.				
7	98,0MHz (*1)	60dB	98,00MHz	T1	Ajustar hasta que la tensión de CC entre el terminal no. 46 y masa sea la máxima.
8	98,000MHz (*1)	60dB	98,00MHz	T2 (CENTER)	0V CC entre el terminal no. 44 y el no. 45 sea la mínima.
9	98,000MHz (*1)	60dB	98,00MHz	T2 (DIST)	Ajustar hasta que la distorsión en el terminal TAPE 1 REC sea la mínima.
10	Repetir los pasos 8 y 9 hasta que se satisfagan ambos requisitos.				
11	Poner el selector MODE MONO en la posición STEREO.				
12	98,0MHz (*1)	60dB (sin modulación)	98,00MHz	VR2	Ajustar la señal en el terminal no. 11 a 19kHz (±100Hz).
13	98,0MHz (*1) Ajustar a modulación estereofónica (*2)	60dB	98,00MHz	T1 (dentro de ±90°)	Ajustar hasta que la distorsión en el terminal TAPE 1 REC L o R sea la mínima.
14	98,0MHz (*1) Ajustar a modulación estereofónica (*2)	31dB	98,00MHz	VR1	Obtener una posición anterior a la activación del circuito de silenciamiento y antes de que se ilumine el indicador STEREO.

Sintonizador de AM

- Conectar el generador de señales de AM (AM SG) al terminal AM ANTENNA a través de un resistor de 10Kohmios.
- Poner el selector de función de AM en la posición ON y el de AM CHANNEL STEP (del panel posterior) en la posición de 10kHz.

(*3) Sintonizar el AM SG con el SX-6.

Paso	AM SG (400Hz, 30% modulación)		Frecuencímetro del SX-6	Punto de ajuste	Procedimientos de ajuste
	Frecuencia	Nivel			
1	Sin señal		520kHz	L101	2V CC entre el terminal no. 7 y masa.
2	Sin señal		1620kHz	TC102	24V CC entre el terminal no. 7 y masa.
3	Repetir los pasos 1 y 2 hasta que ambas especificaciones sean correctas.				
4	600kHz (*3)	40dB	600kHz	Antena de barra	Ajustar hasta que la tensión de CC entre el terminal no. 46 y masa sea la máxima.
5	1400kHz (*3)	40dB	1400kHz	TC101	
6	Repetir los pasos 4 y 5 hasta logarse la máxima sensibilidad.				

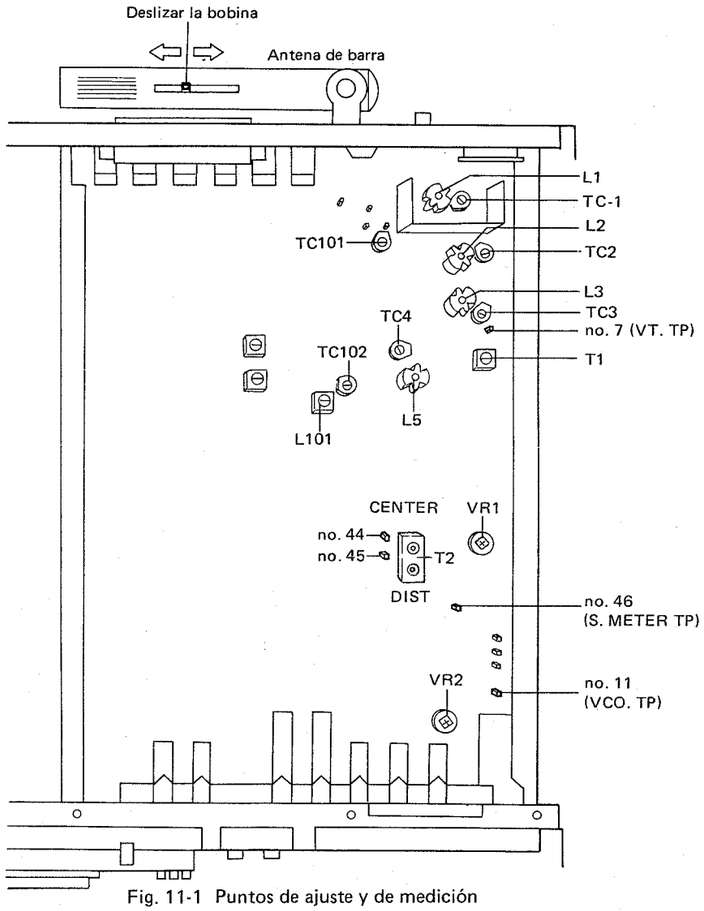

Fig. 11-1 Puntos de ajuste y de medición

Ajuste de la corriente devatiada

- Girar completamente VR1 (izq.) y VR2 (der.) hacia la izquierda.
- Sin ninguna carga ni señal de entrada, poner el interruptor de la alimentación (POWER) en la posición ON y dejarlo así durante 10 minutos.
- Poner el selector A de altavoces (SPEAKERS) en la posición ON.

Punto de ajuste	Valor prescrito	Terminal de medición
VR1 (izq.)	30mV±15mB	Entre el terminal de prueba de punto — izq. (TP-L) (+) y el terminal SPEAKERS A (izq.+) del panel posterior.
VR2 (der.)	30mV±15mV	Entre el terminal de prueba de punto — der. (TP-R) (+) y el terminal SPEAKERS A (der.+) del panel posterior.

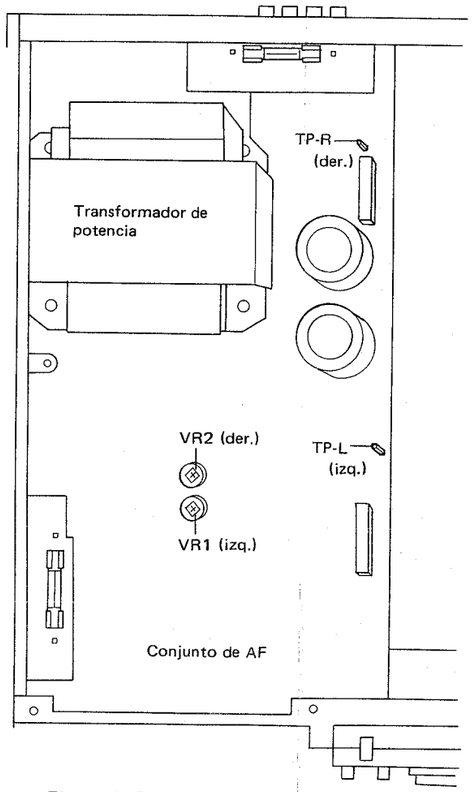

Fig. 11-2 Puntos de ajuste y de medición